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Wednesday April 1st, 2020 8:30 AM-11:00 AM

Course 1 8:30 AM-11:00 AM

CROSS-NATIONAL COMPARISONS OF PSYCHOLOGICAL STRESS: USING THE HEALTH AND RETIREMENT STUDY AND 9 SISTER STUDIES TO UNDERSTAND STRESS, HEALTH, AND CULTURE

Alexandra Crosswell, PhD, Kimberly Lockwood, PhD, Drystan Phillips, MA,
Elissa S. Epel, PhD¹

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This workshop, hosted by leaders of the NIA-funded Stress Measurement Network and the Gateway to Global Aging Data, will introduce researchers to a newly available resource for studying the relationship between stress, health, aging, and culture. Measures of psychological stress that are included in the Health and Retirement Study and 9 other sister studies, have been harmonized. These sister studies are: English Longitudinal Study of Ageing (ELSA), the Survey of Health, Ageing, and Retirement in Europe (SHARE), the Mexican Health and Aging Study (MHAS), the Costa Rican Longevity and Healthy Aging Study (CRELES), the Korean Longitudinal Study of Aging (KLoSA), the Japanese Study of Aging and Retirement (JSTAR), the Irish Longitudinal Study of Ageing (TILDA), the Chinese Health and Retirement Longitudinal Study (CHARLS), and the Longitudinal Aging Study in India (LASI). This means that self-report questionnaires from all waves of all 10 studies have been combed through carefully to identify every survey items that capture a stress-related construct. These items were categorized in to eight domains of stress: early life stress, stressful life events/ traumatic events, chronic stressors, job stress, discrimination, social strain and unsupportive relationships, loneliness, and neighborhood chaos. Our team is hosting this interactive workshop for trainees and junior investigators interested in taking advantage of this tremendous data resource. The attendees will be introduced to the many stress measures harmonized across the studies and receive in-depth training on how to access and utilize this resource. We will lead participants through an exercise in which they identify a research question, the studies and measures they will use, and the analytic technique they will deploy. We will build in time for small group and individual consulting to help attendees brainstorm and refine their own research questions. These workshops will be hosted by a leader of the Stress Measurement Network in collaboration with a member of the Gateway to Global Aging team.

Course 2 8:30 AM-11:00 AM

AN INTRODUCTION TO ADAPTIVE INTERVENTIONS AND SEQUENTIAL MULTIPLE ASSIGNMENT RANDOMIZED TRIALS (SMART)

Ahnalee Brincks, Ph.D.¹, Shawna N. Smith, PhD²

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Disease prevention and disease management often require adjustment to intervention or treatment based on individual response or changing needs. Adaptive interventions provide an operationalized framework for decisions about whether, when, how and for whom to alter an intervention or treatment for optimal outcomes. In the first half of this course, we introduce adaptive interventions including key elements of an adaptive intervention, contexts in which adaptive interventions are beneficial, and important considerations in the design of adaptive interventions. The second half of this course is devoted to the sequential multiple assignment randomized trial, or SMART. We will demonstrate how SMARTs inform the development of high-quality adaptive interventions, discuss the research questions related to adaptive interventions that SMARTs can address, and offer considerations for designing and powering SMARTs. We will provide examples of adaptive interventions and SMART experiments throughout the course. Resources for further reading and training will also be provided.

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Course 3 8:30 AM-11:00 AM

NIH CLINICAL TRIALS SHORT COURSE: ENFORCEMENT, FLEXIBILITIES, AND TOOLS FOR THE SOCIAL-BEHAVIORAL COM- MUNITY

William N. Elwood, Ph.D.¹, Christine M. Hunter, PhD², DAWN A. MORALES, Ph.D.³, Alyssa A. Tonsing-Carter, Ph.D.¹, Rebecca J. Williams, Pharm.D, MPH¹, William T. Riley, Ph.D.⁴

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across the lifecycle of clinical research; including application submission, trial registration, submitting progress reports, and reporting final study outcomes. The NIH broadly defines a clinical trial as a “research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes.” This short course will provide an overview of the clinical trial policies, discuss how they apply to behavioral and social science research, and describe resources and tools to assist with successful grant application and study conduct. In addition to the overview, the course will go into more detail about study registration and reporting, protocol development, and considerations for basic experimental research with humans (BESH). The session will include tips and resources for how to register and report behavioral trial information in ClinicalTrials.gov. This will include discussion of several new research design examples (e.g. cluster randomized trials, micro-randomized trials, fractional factorial designs and adaptive designs) and educational tools to assist with registration and reporting. The course will provide an overview of the new protocol template and e-tool that were developed to support researchers in writing protocols for clinical trials that measure a social or behavioral outcome or test a behavioral or social science intervention. Panelist will also provide an overview of BESH, which are studies “that prospectively assign human participants to conditions (i.e., experimentally manipulate independent variables) and that assess biomedical or behavioral outcomes in humans for the purpose of understanding the fundamental aspects of phenomena without specific application towards processes or products in mind.” Current reporting and registration flexibilities for BESH will be reviewed. The course will also include time for questions and discussion between attendees and panelists.

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Course 4 8:30 AM-11:00 AM

CREATING OPEN AND TRANSPARENT BEHAVIORAL MEDICINE RESEARCH: ESSENTIAL CONCEPTS, SKILLS, AND TOOLS

Ian Sullivan, n/a¹, Laura D. Scherer, PhD², Megan A. McVay, PhD³

¹Center for Open Science, Charlottesville, VA; ²University of Colorado, Aurora, CO; ³University of Florida, Gainesville, FL

Description: Increasingly, behavioral medicine researchers are being asked by journal editors and funders (including National Institute of Health) to demonstrate that their science is transparent and reproducible. This workshop will introduce concepts as well as present concrete steps researchers can take to increase the transparency and reproducibility of their research. Topics include project documentation, pre-Analysis plans, and strategies to plan for and facilitate data sharing. Open source tools that facilitate implementation of transparent practices in a scientific workflow will be presented. The workshop will be hands-on and is aimed at graduate students, postdocs, and faculty across disciplines. No knowledge of programming or other specialized tools is required. Attendees will need to bring their computer.

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Course 5**8:30 AM-11:00 AM****CANCER-RELATED DATA RESOURCES TO FACILITATE YOUR BEHAVIORAL RESEARCH**Richard P. Moser, PhD¹, Susan M. Czajkowski, Ph.D.², Frank M. Perna, Ed.D., Ph.D.³, Michelle A. Mollica, PhD, MPH, RN, OCN⁴¹National Cancer Institute/Behavioral Research Program, Rockville, MD; ²Division of Cancer Control and Population Sciences, National Cancer Institute, NIH, Bethesda, MD; ³National Cancer Institute, ROCKVILLE, MD; ⁴National Cancer Institute, Bethesda, MD

The National Cancer Institute (NCI) and other government agencies have many data sources that can be used by behavioral researchers to answer important questions related to cancer prevention and control. These datasets can be valuable sources of information on the relationships between psychosocial, environmental, health policy and health system-level variables and cancer-related behavioral and health outcomes. The purpose of this course is to familiarize SBM attendees with several key NCI-supported data resources and facilitate their ability to utilize these data sources, alone and in conjunction with other health-related datasets through data linkages.

This course will begin with an overview of the federal government's data ecosystem and then describe in detail several relevant cancer-related data sources. These publicly-available resources contain survey data that assess psychosocial, behavioral and policy-related predictors, moderators/mediators and outcomes. Other existing data sources will be described that can be linked with these survey data to extend the utility of the data and offer opportunities to answer novel cancer-related research questions, including the ability to assess factors at multiple levels of influence (e.g., cells to society). Several applied examples—using data particularly suited for behavioral researchers—will be presented demonstrating how the NCI-supported datasets can be linked to other publicly available data in order to educate attendees on these methods and inspire them to conduct similar projects. These datasets include the Surveillance Epidemiology and End Results (SEER) linked data (SEER-MHOS and SEER-CAHPS), Health Information National Trends Survey (HINTS) and the Classification of Laws Associated with School Students (CLASS). Lastly, NCI program officers will discuss several NIH funding mechanisms that can support these types of linkage studies and will answer attendees' questions during a final discussion period.

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Course 6**8:30 AM-11:00 AM****COMMUNITY HEALTH PROGRAMS: EVALUATION FRAMEWORK, LESSONS LEARNED, AND APPLIED PRACTICE**Ryan J. Kalpinski, Ph.D.¹, Mario G. Nicolas, Ph.D.², Gerald W. Talcott, Ph.D.³, Andrew Dunkle, Ph.D.⁴¹United States Air Force, JB ANDREWS, MD; ²Chenega Corp. (Contractor for Air Force Medical Operations Agency), San Antonio, TX; ³University of Virginia, SAN ANTONIO, TX; ⁴United States Air Force, San Antonio, TX

Community health programming holds great promise. Critically, too few such programs exist, in addition to which many that do exist fail ultimately to produce the outcomes for which they were designed. How can this be so?

Evident on review of the Department of Defense's and Veterans Administration's portfolio of effort are a broad variety of community health programs that have reached dissemination. Resulting are practical considerations for program development, implementation, and evaluation of direct relevance to behavioral scientists who mean to make a difference at the population level.

The goal of this pre-conference course is to leverage Grembowski's (2016) framework for program evaluation to draw 'lessons learned' from among a series of real-world programs noteworthy both for their successes and for challenges they continue to face in the domains of dissemination and maintenance. Topics of central focus will include: Assessment of the needs and preferences of persons and institutions residing within the community; strategies by which to make an inventory of local resources and strengths; integration of stakeholder perspectives; the design of implementation-support tools; and the development of a coordinated plan for evaluation, iterative refinement, and maintenance. The pre-conference course will conclude with an 'application lab' during which attendees will develop or refine a community health program relevant to the community they serve.

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Wednesday
April 1st, 2020
11:30 AM-2:00 PM

Course 7**11:30 AM-2:00 PM****PRACTICAL STRATEGIES FOR COST-EFFECTIVENESS ANALYSIS IN RANDOMIZED CONTROLLED TRIALS**Jennifer Funderburk, PhD¹, Cerissa L. Blaney, PhD², Jeffrey Hoch, PhD³¹VA Center for Integrated Healthcare, Syracuse, NY; ²Lifespan / Brown University, Barrington, RI; ³University of California at Davis, Sacramento, CA

Increasingly, researchers are being asked to provide information on the value of their behavioral treatments. This goes beyond, "How well does the treatment work?" or even, "How much does it cost?" The core issue is considering the extra gains in light of the extra costs. To address this issue, one must analyze costs and effectiveness simultaneously in a cost-effectiveness analysis. This course introduces Practical Strategies for Cost-Effectiveness Analysis in Randomized Controlled Trials.

A recently completed multi-site RCT on a brief behavioral activation intervention for depression in primary care led by Dr. Funderburk serves as the practical example for the session. Brief "theory bursts" will be followed with group discussions focused on how to apply the ideas recently introduced. Given the level of the course and the focus on RCT data, the main analytic technique will be net benefit regression. Dr. Hoch and colleagues invented net benefit regression and published an award-winning article about it in 2002. By varying the value for willingness to pay, it is possible to study both the extra cost, the extra effectiveness, and the incremental net benefit using net benefit regression.

In addition, Dr. Hoch will review key Graphs from cost-effectiveness analysis, including the cost-effectiveness plane, the cost-effectiveness acceptability curve and the incremental net benefit by willingness to pay curve. Participants will learn how to interpret the information in these Graphs and how to explain them to non-experts.

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Course 8

11:30 AM-2:00 PM

WRITING WINNING TRAINING GRANTS: DEVELOPMENT, RESPONDING TO CRITIQUES, AND INCORPORATING TECHNOLOGY INTO PROPOSALS

Danielle Arigo, Ph.D. in Clinical Psychology¹, Graham Thomas, Ph.D.², Susan D. Brown, PhD³, Lisa Cadmus-Bertram, Ph.D.⁴, Carly M. Goldstein, PhD⁵, Stephanie Manasse, Ph.D.⁶, Jessica Y. Breland, PhD⁷, Charles R. Jonassaint, PhD, MHS⁸, Stephanie P. Goldstein, PhD⁹, Matthew C. Whited, Ph.D, Licensed Psychologist¹⁰

¹Rowan University, Glassboro, NJ; ²Brown Medical School, Providence, RI; ³Kaiser Permanente Northern California, Oakland, CA; ⁴University of Wisconsin - Madison, Madison, WI; ⁵The Miriam Hospital/Alpert Medical School of Brown University, Providence, RI; ⁶Drexel University, Philadelphia, PA; ⁷VA Palo Alto Health Care System, Menlo Park, CA; ⁸University of Pittsburgh, Pittsburgh, PA; ⁹Alpert Brown Medical School/The Miriam Hospital Weight Control and Diabetes Center, Providence, RI; ¹⁰East Carolina University, Greenville, NC

Predoctoral and early career training grants such as NIH F/K and VA CDA awards can accelerate a behavioral medicine research career. These grants offer both project funds and protected time for trainees and junior faculty to spend on research and career development activities. Successful applications for training grants require unique training plan and project considerations that are not explicitly described in program announcements. The processes of initial application preparation and responding to critiques confer unique pitfalls that can be avoided with effective guidance. In addition, as the use of technology to assess and intervene on health behavior becomes more common, applicants must pay special attention to strategies for integrating technology-related research and training aims in training grant proposals.

The goal of this workshop is to provide advice on preparing strong training grant proposals from experienced and successful SBM members. Speakers include current and former awardees, mid-career investigators who have successfully transitioned to R-level funding, and training grant mentors. Presentations and discussions will focus on the unique aspects of F, K, and CDA applications, with emphasis on 1) considerations for initial proposal preparation, 2) best practices for responding to critiques and incorporating technology into research and training plans, and 3) long-range planning for the transition to independent funding. The session also will feature breakout groups for attendees focused on each type of training grant. Attendees at all stages of the proposal process will have opportunities to ask questions and receive guidance in the development of their individual training and research aims.

Participants will be asked to bring a laptop, smartphone, or tablet device to facilitate engagement in activities.

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Course 9

11:30 AM-2:00 PM

A PROJECT MANAGEMENT GUIDE FOR THE PLANNING AND EXECUTION OF BEHAVIORAL RESEARCH TRIALS

Jessica L. Bibeau, MA, PMP¹, Kim Massie, B.S.², Julia Berteletti, MSW³

¹University of Connecticut, Storrs, CT; ²Claremont Graduate University, South Jordan, UT; ³Klein Buendel, Inc., Golden, CO

The goal of this workshop is to provide guidance to investigators or coordinators on how to manage research projects using a formal project management approach. Regarding project management, there are many similarities between research and business industries. In both cases, there are temporary endeavors with sponsors, specified deliverables, subcontracts, a set budget, and timeline. However, the use of formal project management guidelines and training is not common in behavioral research. The Project Management Book of Knowledge (PMBOK) is a widely accepted standard that offers a guide for best practices for managing projects. The PMBOK includes a description of each phase of a project (initiation, planning, execution, monitoring/controlling, and closing) as well as the processes to accomplish each phase successfully. Each process has inputs, tools, and outputs for completing the phase objectives. The guide provides a framework for a smooth flow through each phase, starting from project initiation through closing. It provides tools to reduce the risk of the project creeping outside of the budget or timeline, and ensures that what is completed is accurate and meets quality expectations. Many investigators and coordinators receive training from peers, predecessors, or learn as they go. Lack of formal training creates potential for errors, missed deliverables, and overspent or misspent budgets. Certified project managers aren't usually budgeted in a grant due to funding restrictions and/or limited institutional support. This workshop will specifically focus on the planning and execution stages of the process. Using guidelines from the PMBOK, we will: discuss the importance of scope development and how that will drive the foundation of the project management plan; review how to break down the scope to identify specific project activities and deliverables; assign activities to individuals and develop the project calendar; plan project resources and cost; discuss the importance, strategies, and plans for communication; and provide a strategy for managing the project work. Understanding formal project management strategies will help in the successful planning and execution of research projects. Implementing these strategies in a research environment will help align research to the project management standards. This seminar is geared toward new faculty, managers, coordinators, postdoctoral fellows and graduate students.

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Course 10

11:30 AM-2:00 PM

YOU ARE MORE THAN YOUR CRAVINGS!

Maria Karekla, PhD¹, Megan Kelly, Ph.D.²

¹University of Cyprus, Nicosia, Nicosia, Cyprus; ²Edith Nourse Rogers Memorial Veterans Hospital, Bedford, MA

The application of Acceptance and Commitment Therapy (ACT) for the treatment of many problems where craving is a core feature is growing (e.g., substance use, tobacco use, overeating, gambling, compulsive sexual behavior). Individuals presenting with such difficulties often have difficulty managing cravings, although this is an inevitable aspect of experiencing substance use and other addictive and compulsive behaviors. Difficulties involving cravings are associated with substantial distress, functional impairment, and low quality of life. This workshop will present the latest developments in ACT for the treatment of difficulties where craving is an important component. The workshop will also present the latest developments in ACT for dealing and overcoming cravings, and examine the efficacy, the mechanisms, and processes of change of ACT for the treatment of craving-related problems. Concepts will be illustrated using live demonstrations, experiential exercises, metaphors, and worksheets. This workshop is designed to teach skills needed to explore ACT as an assessment model and intervention method for

addressing craving. It will be mostly experiential and will balance an understanding of the model with a personal connection with the issues raised in ACT, and with skill development.

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Wednesday April 1st, 2020 11:30 AM-4:45 PM

Course 15

11:30 AM-4:45 PM

IDEAS TO IMPACT: SUCCESSFUL PARTNERSHIPS TO CO-DESIGN AND DISSEMINATE DIGITAL HEALTH INTERVENTIONS AT SCALE

Danielle Ramo, PhD¹, Jana Haritatos, PhD¹, Andrew Baker, N/A², Kate Wolin, ScD³, Robert Morris, PhD⁴, Faye Sahai, MBA, SAPM⁵, Sarah Seegal, n/a⁶, Anne Wu, B.A. Psychology, B.A. Economics⁷

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Digital interventions offer the opportunity to distribute health behavior change interventions to young people at scale. However, in practice, many interventions developed in academic settings, even the most rigorously designed and evidence-based, lack a clear pathway toward long-term viability and impact. Do you have a digital intervention (early-stage or studied for many years), and want a chance to workshop it with multidisciplinary experts who have worked to evaluate and disseminate digital interventions to audiences beyond your research participants? Then this preconference workshop is for you.

There have been remarkable advances in the science of behavior change and its application to promoting health and wellbeing, including using technology to deliver interventions. Even so, there is an opportunity to make a stronger impact, particularly with adolescents and young adults (AYA), in whose lives technology is so well-integrated. Imagine a world in which young people could benefit from positive messaging around health behavior as easily as they are exposed to messaging from companies who are trying to sell them products that may be harmful to their health. How can researchers efficiently translate the most promising scientific findings about drivers of youth health and wellbeing into real-world products in a meaningful, ethical, and impactful way?

The goals of this AYA Health Translational Science Pre-Conference are to provide researchers with 1) tools for successful translation to tech at scale; and 2) the opportunity to pitch good ideas to interested potential industry partners and investors. The workshop will include a combination of talks from researchers, industry insiders, product leads, and investors who have successfully evaluated and brought a digital health product to market for the benefit of a large population. It will also include an opportunity for participants to pitch their ideas for science-backed tech products benefiting AYA health in front of a multidisciplinary panel of experts and a cash prize will be awarded for the most promising idea. Finally, attendees will be able to make connections with industry and investor representatives and seed potential future collaborations.

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Course 16

11:30 AM-4:45 PM

DHC PRESENTS: GETTING OUR STUDENTS INDUSTRY-READY: A DESIGN-ORIENTED WORKSHOP TO ADVANCE TRAINING FOR CAREERS IN INDUSTRY

Cynthia M. Castro Sweet, PhD¹, Eric B. Hekler, PhD², Jennifer C. Taylor, PhD², Melanie Hingle, PhD, MPH, RDN³, David Strong, PhD⁴

¹Omada Health, San Francisco, CA; ²UC San Diego, San Diego, CA; ³University of Arizona, Tucson, AZ; ⁴University of California, San Diego, San Diego, CA

As noted by Dr. Sherry Pagoto in her 2019 SBM presidential keynote, there is both strong interest among SBM students and trainees in positions in industry and, simultaneously, a dearth of experience among faculty and training programs to support or assist students in this career pathway. A 2018-member survey indicated that more than half of SBM members are interested in preparing their students for industry careers; at the same time, faculty expressed the need for guidance in how best to support their students in pursuing careers outside of academia. Current masters and doctoral programs in behavioral medicine and related fields do not include training elements designed to prepare students to graduate “industry-ready.” In addition, the major path from graduate and post-doctoral training to an industry job is via internship programs and professional networking, but at present, few SBM-affiliated training programs have active industry-oriented programs.

The purpose of this design workshop is to bring together industry professionals, faculty and training program directors seeking to incorporate industry preparedness into their curricula, and students and trainees interested in industry positions to work together to devise strategies to prepare behavioral medicine trainees to become industry-ready. The workshop will explore issues of mentorship, course offerings, and internship/externship developments with the goal of providing concrete actionable next steps (e.g., an open educational resource) to enhance the industry preparedness training currently offered by SBM faculty at their home institutions.

Participants will be actively involved in crafting an approach for integrating industry-readiness in University-provided training programs. As such, this workshop is intended for those individuals with an active interest and stake in improving the industry-readiness of SBM trainees and who are committed to helping craft the curricular and experiential requirements necessary to impart “industry readiness”. It is not meant for those who are only causally interested in this topic, who would just like to listen in on the discussion.

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Wednesday April 1st, 2020 2:15 PM-4:45 PM

Course 11

2:15 PM-4:45 PM

INCLUSION AND RETENTION OF OLDER ADULTS IN BEHAVIORAL MEDICINE CLINICAL TRIALS: WHY AND HOW?

Kathi L. Heffner, PhD¹, Neha P. Gothe, MA, PhD², Lisa Onken, Ph.D. Clinical Psychology³, Jonathan W. King, PhD⁴, David X. Marquez, PhD, FGSA, FACSM, FSBM⁵, Katherine Hall, PhD⁶, Robert L. Newton, PhD⁷

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For decades, there has been a disparate underrepresentation of older adults in clinical trials. To address this issue, in 2017, the National Institutes of Health changed policy and guidelines regarding the inclusion of individuals across the lifespan, requiring that individuals of all ages, including older adults, be included in NIH-funded clinical research unless there is sufficient justification for their exclusion. This pre-conference course will help behavioral scientists' efforts to comply with this policy to ensure that findings from behavioral medicine intervention trials are generalizable to the older adult population. The workshop will start with a presentation from program directors from the National Institute on Aging Division of Behavioral and Social Research, who will providing an overview of the NIH policy and guidelines, and how NIH grant applicants can be responsive to the guidelines. Next, principal investigators conducting NIH-funded clinical trials targeting older adults will present their experiences, lessons learned, and strategies for recruiting and retaining older adults in behavioral intervention studies with longitudinal follow-up. Topics will include: unique barriers and challenges to recruiting and retaining older adults in research; how to advertise and effectively reach and engage sub-populations of older adults, including informal caregivers and underrepresented older minorities, to ensure their participation in research; existing tools available to support investigators' efforts to engage older adults in clinical trials. The workshop will end with a Q&A with our panel of presenters engaging in open discussion with attendees to answer questions and share ideas. This course will be of particular interest to early-stage and new investigators embarking upon behavioral medicine intervention trials, as well as seasoned researchers whose scientific areas would benefit from expansion of study recruitment to the older adult population.

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Course 12

2:15 PM-4:45 PM

ENHANCING INTEGRATED BEHAVIORAL HEALTH PRACTICES: EVALUATION AND MEASUREMENT OF REAL-WORLD IMPLEMENTATION

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Integrated healthcare providers have a unique opportunity to help provide and promote evidence-based care to the field and utilize evaluation and measurement to help with practice transformation. This workshop is intended to help healthcare providers working within integrated primary care clinics better understand the value of evaluation and assessment in real-world clinical practice. Measures that can be used to assess levels of integration, progress, and to tailor implementation strategies being used to install and sustain integrated behavioral health in primary care will be presented, as well as their real-world application at Stanford Health Care Primary Care clinics. We will describe a cross-model integrated behavioral health framework as a concrete target and how different types of measures can be used to support efforts within clinical settings to transform care. Measures can be used that reflect organizational readiness and capacity to change along multiple dimensions and levels of current integration for measuring baseline and progress with change. They draw from cutting edge dissemination and implementation science. Participants will be asked to engage in the material and identify ways they may utilize these measures in their practices and how it would contribute to practice transformation. Presenters will then share emerging hybrid implementation research designs that are suitable for practice focused research.

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Course 13

2:15 PM-4:45 PM

BETTER, FASTER, STRONGER: APPLYING THE AGILE METHOD IN DIGITAL HEALTH INTERVENTIONS AND PROJECT MANAGEMENT

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The agile method is a specific approach to product and software management for developing products rapidly and iteratively. Principles and tools of the agile method include inputs from end-users, continual reflection and iteration, and frequent structured communication among all team members. Teams are often cross-disciplinary, each member representing an aspect of the product or process. Compared to more traditional, linear approaches to product management, work is delivered more quickly with more appeal to end-users and, ultimately, more value.

In the software and product world there are many examples of how the agile method leads to better products that meet real-world needs quickly. However, to date there are few examples of this approach in research. In this course, we will discuss how to apply the agile method to research involving digital health interventions. In traditional models of scientific research, processes are often slow and outcome evaluation can be hindered by ineffective products or solutions. We will demonstrate the benefits of applying agile methods to research such that teams can learn quickly about the best course of action to maximize the likelihood of a successful project.

Our workshop will introduce participants to the agile method including its principal processes and tools, such as timeboxing, sprints, agile meeting structures, and iterative planning and feedback. We will then discuss how and why to apply an agile methodology to research, with a particular focus on digital health interventions. Specifically, we will discuss how an agile mindset and agile processes can be applied at any phase of the research including agile study designs (e.g., MOST and SMART), usability testing, evaluation, and team management. We will demonstrate these applications using examples from our work in diabetes self-management support interventions. Staying true to an agile approach, workshop presenters will include individuals from various disciplines, including behavioral science, clinical care, technology, and user experience.

All participants will leave with the skills and resources needed to apply the agile method to their own research projects and teams. Valuable hand-out materials outlining the tools and processes as well as additional resources will be disseminated. Our goal is to demonstrate how agile methods can be applied in research so teams can operate more efficiently and users can benefit sooner from interventions that meet their needs and meaningfully impact outcomes.

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Course 14

2:15 PM-4:45 PM

USING R TO PROCESS AND ANALYZE ACCELEROMETER DATA

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Accelerometers are widely used in both epidemiological and clinical research studies for estimating the duration and volume of physical activity (PA) and sedentary behavior (SB), as well as estimating PA at varying intensities. Both uniaxial and triaxial accelerometers have been used to capture movement, typically measured as counts per minute in 60-second epochs (cpm). Processing accelerometer data can be challenging, due to its size (1440 data points per day per participant) and structure. Converting accelerometer data to meaningful physical activity variables typically requires three steps: (1) identifying the period in which the accelerometer was not worn and determine which days have sufficient wear time; (2) calculating physical activity variables of interest for each day of wear; (3) calculate averages across all valid days, and perhaps separately for weekdays/weekends.

R, and its user-friendly workspace application RStudio (and its toolset), is an open-source language and environment for statistical computing and graphics. This workshop will introduce the power of using R for managing, preparing, analyzing, and visualizing accelerometer data. The workshop is designed for beginner to intermediate R users. The workshop will be accessible to those with little to no prior experience using R and there is no expectation that attendees are currently using R or RStudio to manage/analyze their data. We expect users come prepared to “live code” and follow along with the instructors during in-class activities.

A short introduction to the R language and RStudio environment will be given by instructors. The remainder of the workshop will focus on the *accelerometry* package in R, which contains the necessary functions for processing accelerometer data. Example-driven instruction, using data from the 2003–2006 National Health and Nutrition Examination Survey (NHANES), will assist attendees in becoming familiar with reading in accelerometry data for multiple subjects, graphically summarizing accelerometer data within subjects, and summarizing accelerometer data in terms of PA and SB using the *accelerometry* package. Attendees will also learn how to customize their analysis to meet a variety of research questions and interests. The package is compatible with both uniaxial and triaxial minute-to-minute count data. The package was designed for analyzing Actigraph accelerometer data, but can analyze cpm from other devices as well. Attendees will be provided with a copy of all lecture notes, select computer output, and suggested reading lists for future reference. Attendees should be prepared to bring a laptop with R and RStudio already installed so that they may follow along with the examples throughout the course. Instructions on how to install R and RStudio will be sent out to course registrants prior to the start of the course.

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Wednesday April 1st, 2020 6:15 PM-7:30 PM

A101

6:15 PM-7:30 PM

ASSOCIATION OF ARTERIAL FUNCTION WITH CEREBROVASCULAR RESERVE CAPACITY IN RESISTANT HYPERTENSIVES

Patrick J. Smith, PhD, MPH¹, James Blumenthal, PhD¹, Stephanie Mabe, MS¹, Alan Hinderliter, MD², Andrew Sherwood, PhD¹

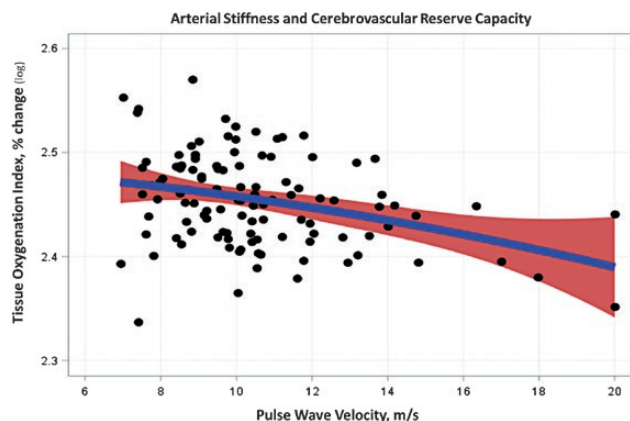
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Background: Resistant hypertension (RH) is associated with greater risk of cerebrovascular events and cognitive decline. Cognitive impairments in hypertension are hypothesized to result from subclinical arterial dysfunction, resulting in impaired cerebrovascular reserve. No studies, to our knowledge, have examined this among individuals with RH.

Methods: We examined the associations between task-based assessments of cognitive function and cerebrovascular reserve among adults with RH participating in the TRIUMPH study. Cerebrovascular reserve capacity was indexed by changes in tissue oxygenation index (TOI) levels, assessed using functional near infrared spectroscopy, while participants were performing a complex cognitive assessment of working memory / executive function (mental arithmetic). Arterial function was assessed using pulse wave velocity (PWV) and resting brachial artery blood flow velocity. Regression analyses controlled for age, sex, ethnicity, clinic SBP, resting TOI, BMI, antihypertensive medication burden, and task-based cognitive performance.

Results: Participants included 128 middle-aged and older adults (mean age = 62.7 [SD = 9.1]) with RH (mean SBP = 139 mm Hg [SD = 10]). Participants tended to be obese (mean BMI = 36.0 [SD = 5.8]) and were on an average of 3–4 antihypertensive medications (mean # = 3.7 [SD = 0.7]). Lower PWV ($\beta = -0.22$, $P = .035$) and greater brachial artery flow velocity ($\beta = 0.33$, $P < .001$) were associated with greater changes in TOI during mental arithmetic (Figure 1), suggesting increased reserve capacity.

Conclusions: Healthier arterial function was associated with greater task-based cerebrovascular reserve responses among adults with RH. Results suggest that impaired cerebrovascular reserve may be a mechanism by which impaired arterial function increases the risk of cognitive impairment in RH.



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A102

6:15 PM-7:30 PM

PROCESSES OF HEALTH BEHAVIOR CHANGE AMONG AGING ADULTS WITH SERIOUS MENTAL ILLNESS

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Purpose: Aging individuals with serious mental illness experience significant medical illness burden and would benefit from proactive medical illness management and sustained health behavior change. In a recent randomized controlled trial, Living Well, a 12-week group intervention that provided didactics and skills training to support medical illness management among adults with serious mental illness, was associated with improvements in illness management behaviors compared to an active control condition. Little is known regarding processes of health behavior change among aging adults with serious mental illness; the present study aimed to examine *how* Living Well led to health behavior changes in a subset of participants.

Methods: Data from qualitative interviews from the randomized controlled trial of Living Well, conducted approximately 3 months after participants completed the intervention, were utilized in the present study. A convenience subset ($n=16$, ages 47–75) of Living Well participants were queried in semi-structured interviews about what they learned in Living Well that they were applying to their daily lives, how Living Well impacted the way they thought about themselves and their health, health changes they made during and subsequent to their participation in the group, and their use of action planning and problem-solving skills taught in the group. All interviews were audio recorded with interviewees' permission and transcribed. Interview transcripts were coded using a general inductive approach, with a combination of a priori and inductive codes. Final coding of each interview was completed independently by two members of the analysis team, in rotating pairs; each pair then met to reconcile coding. All coding was entered into NVivo 11. Three authors engaged in-depth thematic analysis of all coded data relevant to *processes of health behavior change*, with an aim to identifying overarching themes.

Results: Engaging with Living Well increased *salience, self-awareness, agency, and activation* of and for health behaviors, through *information, social learning, skills practice, and non-judgmental accountability*, resulting in *behavior changes* (e.g., improved diet) and *physical and mental health status changes* (e.g., weight loss). Living Well also led to a *shift in outlook* for participants, a holistic and lasting sense of realistic self-agency regarding pursuing health behavior change, solving problems, and persisting in one's efforts despite setbacks.

Conclusions: The present study identified key elements of a psychosocial intervention for aging adults with serious mental illness – personalized didactic information, group-based social learning, opportunity for skills practice with feedback, and a social environment of nonjudgmental accountability – which led to positive attitudinal, behavioral, and health status changes.

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A103

6:15 PM-7:30 PM

BLOOD PRESSURE MNGMT AS A POTENTIAL MECHANISM TO REDUCE RISK OF COGNITIVE DECLINE & DEMENTIA: EDUCATING MDS ON BEHAVIOR CHANGE

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Cognitive impairment, including clinical Alzheimer's-type dementia (CATD), mild cognitive impairment (MCI), or age-related cognitive decline (ARCD), affects a growing number of older adults. Given the impact of cognitive impairment on society and the challenges posed by this epidemic, there is increasing interest in innovations in evidence-informed risk reduction of cognitive impairment.

In 2015, the National Institute on Aging (NIA) asked the National Academies of Sciences, Engineering, and Medicine (NASEM) to participate in a two-part project focused on examining the evidence of interventions for preventing, slowing, or delaying the onset of MCI and CATD, and delaying or slowing ARCD. The resulting 2017 NASEM report, "Preventing Cognitive Decline and Dementia: A Way Forward", indicated that blood pressure management for people with hypertension can prevent, delay, or slow cognitive impairment, including ARCD, MCI, and CATD.

This session highlights the latest scientific findings about the benefits of blood pressure management, as well as other healthy lifestyle behaviors, to cognitive health. Furthermore, the session will highlight CDC's Healthy Brain Road Maps and its public health partnerships to implement associated activities in Indian Country and for the broader population. ACPM will provide information on tools that prepare clinical care teams to recommend behavioral interventions for blood pressure control in middle-aged adults to reduce risk of cognitive impairment in later life.

Professional Practice Gap: Clinical care teams may not be aware of the preventive benefits of controlling blood pressure as prevention for cognitive impairment and may need concrete steps for recommending behavioral health interventions.

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BEHIND THE RESPONSES TO FALL PREVENTION: PERCEIVED FALL RISKS, FALL PREVENTION STRATEGIES, AND SELF-IDENTIFY

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Background: Older adults are often reluctant to talk about fall prevention and resist taking an active part in fall prevention strategies.

Objectives: Understand how older adults perceive fall risks and fall prevention, and identify attributes that facilitate or hinder their acceptance and engagement in fall prevention.

Methods: A Motivational Interviewing intervention for fall prevention was conducted as part of a larger clinical trial to facilitate behavior changes related to fall prevention. This presentation reports on qualitative content analysis of fall prevention Motivational Interviews. Thirty Motivational Interviews with inpatients (age ≥ 65; high fall risk [≥ 45 on Morse Fall Scale]) at a VA hospital were audio-recorded and transcribed verbatim. Transcriptions were analyzed using conventional qualitative content analysis methods (Hsieh & Shannon, 2005) by 3 researchers.

Results: While some participants were accepting of their fall risks and engaged in fall prevention activities, others were in denial or resigned from fall prevention. Factors influencing their perception for fall prevention included 1) their perceptions about fall risks, 2) types of fall prevention strategies suggested, and 3) their self-identity. If fall risks were considered temporary or "extrinsic" (e.g., recent surgery), participants were more likely to engage in activities to keep them safe. In contrast, if the fall risk was perceived as intrinsic, permanent, or out of their control (e.g., too sick, have no energy, getting old), participants were likely to deny the risk or resign from engaging in fall prevention. Fall prevention strategies that were visible, require a major adjustment in life, or involved others (e.g., using walker/cane, modification of home, asking other's help) were difficult to adopt than those that require minor modifications. Their perceptions about fall risks and fall prevention strategies were weighted with their self-identity. If the risks or strategies did not agree with their self-identity (e.g., I am not that old), they did not engage or accept the fall prevention strategy.

Conclusion: Participants' perceptions about fall risks, fall prevention strategies, and self-identity influenced their acceptance and engagement with fall prevention. The findings underscore the importance of understanding older adults' perceptions to better facilitate individualized approach to engage patients in fall prevention.

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A105

6:15 PM-7:30 PM

COGNITIVE IMPAIRMENT NO DEMENTIA AND ASSOCIATIONS WITH HEALTH LITERACY, SELF-MANAGEMENT SKILLS AND FUNCTIONAL HEALTH STATUS

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Background: Cognitive impairment no dementia (CIND) increases as the U.S. ages, and is associated with poor health outcomes. CIND may negatively impact health through the ability to independently self-manage illness, given the cognitive demands associated with many health-related tasks.

Objectives: To determine the prevalence of CIND among a diverse, community-based population, and establish associations between CIND and health literacy, chronic illness self-management and functional health status.

Design: Secondary analysis using baseline data from the prospective ‘LitCog’ cohort study.

Participants/Setting: 865 adults without dementia aged 55–74, from six socioeconomically diverse primary care clinics in Chicago, IL.

Main Measures: CIND was categorized according to severity (None, Mild, Moderate/Severe). Health literacy was measured using the Newest Vital Sign (NVS) and Test of Functional Health Literacy in Adults (TOFHLA). The Comprehensive Health Activities Scale (CHAS) was used to measure self-care performance. Patient-Reported Outcomes Measurement Information System (PROMIS) measures were used to determine physical and mental health status.

Key Results: 36% of the sample exhibited CIND. It was strongly associated with greater likelihood of limited health literacy (NVS: Mild [OR 3.25; 95% CI 1.93, 5.49], Moderate/Severe [OR 6.45; 95% CI 3.16, 13.2]; TOFHLA: Mild [OR 3.46; 95% CI 2.08, 5.75], Moderate/Severe [OR 8.82; 95% CI 4.87, 16.0]; all p 's < 0.001) and poor chronic disease self-management (Mild [B = -11.2; 95% CI -13.5, -8.90], Moderate/Severe [B = -21.0; 95% CI -23.6, -18.4]; both p 's < 0.001). There were no significant associations between CIND and functional health status in adjusted models.

Conclusions: In this cohort of older adults, CIND was prevalent and strongly associated with requisite skills for managing everyday health needs. Greater attention to subtle declines in chronic disease self-care may assist with CIND identification and care management within this population. Conversely, when CIND is observed, clinicians should expect and address difficulties with self-management.

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A106

6:15 PM-7:30 PM

THE BIG REVEAL: FAMILY DISCLOSURE PATTERNS OF BRCA GENETIC TEST RESULTS AMONG YOUNG BLACK WOMEN WITH INVASIVE BREAST CANCER

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Background: Despite higher incidence and mortality of breast cancer among younger Black women, genetic testing outcomes remain severely understudied among Blacks. Past research on disclosure of genetic testing results to family members has disproportionately focused on White, educated, high socioeconomic status women. This study addresses this gap in knowledge by assessing (1) to whom Black women disclose genetic test results and (2) if patterns of disclosure vary based on test result (e.g., *BRCA1/2* positive, negative, variant of uncertain significance [VUS]).

Methods: Black women (N=149) with invasive breast cancer diagnosed age ≤ 50 years from 2009–2012 received free genetic testing through a prospective, population-based study. At 12-months post-testing, women reported with whom they shared their genetic test results. The exact test by binomial distribution was used to examine whether disclosure to female relatives was significantly greater than disclosure to male relatives, and logistic regression analyses tested for differences in disclosure to any female relative, any male relative, parents, siblings, children, and spouses by genetic test result.

Results: Most (65%) women disclosed their results to at least one family member. Disclosure to female relatives was significantly greater than disclosure to males ($p < 0.001$). Compared to those who tested negative or had a VUS, *BRCA1/2* positive women were significantly less likely to disclose results to their daughters (OR_{*BRCA* positive} = 0.08, 95% CI = 0.01–0.71, $p = 0.024$) and mothers (OR_{*BRCA* positive} = 0.12, 95% CI = 0.02–0.98, $p = 0.048$) by 12 months post-genetic testing. Genetic test result did not predict any other type of disclosure (all p 's > 0.08).

Conclusions: Results suggest that in Black families, one benefit of genetic testing – to inform patients and their family with cancer risk information – is not being realized. To increase breast cancer preventive care among high-risk Black women, the oncology care team should prepare Black *BRCA1/2* positive women to share genetic test results with family members and, in particular, their daughters and mothers.

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A107

6:15 PM-7:30 PM

ASPIRIN USE FOR CANCER PREVENTION: A SYSTEMATIC REVIEW OF PATIENT AND HEALTHCARE PROVIDER ATTITUDES AND BEHAVIOURS

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Background: The US Preventive Services Taskforce recommend aspirin for colorectal cancer prevention among adults aged 50–69 who have ≥10% cardiovascular disease risk. The UK National Institute of Health and Care Excellence have recommended aspirin for Lynch Syndrome carriers. The implementation of aspirin for cancer prevention depends on informed uptake, high adherence, and understanding barriers to achieving these goals.

Aim: To undertake a systematic review to investigate: 1) uptake and/or adherence to aspirin for cancer prevention, or 2) psychological and/or demographic factors affecting public decisions to use aspirin for cancer prevention, or 3) healthcare provider (HCP) attitudes towards implementing aspirin in clinical care.

Method: A systematic search was undertaken to identify, appraise and synthesise published and grey literature searching the following resources: Medline, Pubmed, EMBASE, CINAHL, Web of Science, Cochrane Library databases, clinical trial registries and ProQuest Dissertations & Theses A&I. Screening and data extraction was completed by one author, with a second duplicating these efforts for 20% of the studies.

Results: 9596 titles/abstracts were screened, resulting in 986 full texts, and 34 included studies. Hand searching identified two additional studies (36 studies total). Three studies reported a high willingness to use aspirin (44%–76%), and three studies reported low uptake (2%–13%). Younger age, higher education, male gender, black ethnicity, having more clinical risk factors, and higher perceived risk were associated with a greater willingness to use aspirin. No studies investigated factors associated with uptake. Adherence estimates varied (30–100%) in 25 studies reporting this outcome, but a large proportion (69%) reported high adherence rates (>80%). No studies investigated factors associated with adherence. Three studies reported moderate support among HCPs for aspirin use in higher risk patients. Support was higher among HCPs who managed more patients with colorectal cancer or Lynch Syndrome, had a genetics specialty, had more experience, or were more aware of aspirin's chemopreventive effects. No qualitative studies were identified for any aim.

Conclusion: Willingness to use aspirin for cancer prevention is high, but uptake is low with some apparent disparities. Adherence is moderate to high among current users. While the role of perceived risk in decision-making was established, there is substantial scope for behavioral medicine research into the psychological factors affecting aspirin uptake and adherence, and the barriers and facilitators to implementing aspirin into clinical care. On behalf of the Aspirin for Cancer Prevention Group (AsCaP)

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A108

6:15 PM-7:30 PM

SELF-MANAGEMENT OF SIDE-EFFECTS AMONG WOMEN WITH BREAST CANCER USING ADJUVANT HORMONAL THERAPY: A SYSTEMATIC REVIEW OF REVIEWS

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Background: Most women with estrogen-receptor positive breast cancer are prescribed adjuvant hormone therapy (HT) medications (e.g. tamoxifen and Aromatase Inhibitors). Medication side-effects are common, can reduce quality of life and compromise medication adherence. Some side-effects can be managed by patients, but an evidence-based overview is required to synthesise the evidence for self-management strategies and to support patient and clinician decision-making.

Objectives: To a) synthesise existing systematic reviews and guidelines of self-management strategies for side-effects resulting from adjuvant HT, and b) identify effective and safe strategies to recommend to patients.

Method: A search for published systematic reviews and meta-analyses was undertaken in March 2019 in CINAHL, Cochrane, EMBASE, MEDLINE, and Web of Science. The AMSTAR2 checklist was used to assess review quality. Additionally, in July 2019 we searched for grey literature and clinical guidelines on websites of international oncology societies and agencies, and the following databases: CPG Infobase, GIN, NHMRC Australian Clinical Practice Guidelines, NICE Evidence, SIGN, and TRIP. Searches focused on side-effects that two primary care physicians agreed could be safely managed without clinical input (e.g. fatigue, hot flushes). Screening, data extraction, and quality assessment were completed in duplicate.

Results: 472 titles and abstracts of systematic reviews (SRs) were screened, resulting in 62 full texts and 17 included studies. Backwards citation searching identified an additional four SRs (22 in total). Titles of 655 clinical guidelines (CGs) were screened, 60 underwent full text review, and 17 were included. SRs and/or CGs were identified for all symptoms, but overall there was a lack of high quality evidence for effective self-management strategies. SRs focusing on acupuncture for hot flushes (7 SRs) and/or arthralgia (10 SRs) were common, but concluded this strategy had limited efficacy. Physical activity featured in five SRs, and appeared promising for arthralgia management, although definitive trials are needed. The overall quality of SR evidence was compromised by small sample sizes, limited follow-up, and heterogeneity in the strategies tested. Harms were generally well monitored, and were minimal for most strategies. CGs provided further strategies for some side-effects, e.g. paced breathing, wearing layers for hot flushes. While the CGs were not always evidence-based, the advice was generally pragmatic, and no-to-low-risk.

Conclusion: Despite decades of research and a large number of SRs and CGs, effective strategies to support self-management of common side-effects of adjuvant hormonal therapy are lacking. Appropriately designed trials are needed to provide definitive recommendations to women using this therapy, and their clinicians.

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A109

6:15 PM-7:30 PM

ASSOCIATIONS OF OPIOID BELIEFS WITH PAIN SEVERITY/
INTERFERENCE AMONG CANCER PATIENTS PRESCRIBED
LONG-ACTING OPIOIDSChelsea S. Rapoport, BA¹, Emily Wright, BA², Areej El-Jawahri, MD³,
Jennifer S. Temel, MD⁴, Lara Traeger, PhD⁵¹Massachusetts General Hospital / Cancer Outcomes Research Program, Cambridge, MA; ²Harvard T.H. Chan School of Public Health, Boston, MA; ³Massachusetts General Hospital Cancer Center, Boston, MA; ⁴Massachusetts General Hospital, Boston, MA; ⁵Massachusetts General Hospital/Harvard Medical School, Boston, MA**Background:** At least two-thirds of patients with incurable cancer experience moderate to severe cancer pain. Although long-acting opioids are a gold standard treatment for chronic cancer pain, patients commonly report concerns about opioids, such as fears of addiction and other negative effects. This study explored relationships between patient beliefs about opioid medications and patient experiences of pain.**Methods:** We analyzed cross-sectional data from an observational study of Massachusetts General Hospital ambulatory patients with locally advanced or metastatic cancer, who were currently taking a prescribed long-acting opioid for chronic cancer pain (n=131). Participants completed a self-report survey, including measures of patient beliefs about pain medications (9-item Family Pain Questionnaire-Knowledge [FPQ-K]) and pain severity and interference with quality of life in the past 24 hours (items from the Brief Pain Inventory). We conducted a series of multiple linear regression models, adjusting for age, gender, race, and long-acting opioid dose, to evaluate associations of patient beliefs about pain medications with pain severity and interference at p<.05.**Results:** Participants (71% female, 85.5% white, mean [M] age=57.7 [SD=11.9]) were prescribed an oral long-acting opioid medication (75.6%) or a fentanyl patch (24.4%), with morphine equivalent dose M=60.0mg (SD=128.3). 52.3% of participants reported at least moderate pain ($\geq 4/10$) on average in the past 24 hours. In separate multiple regression models, more negative beliefs about pain medications were associated with greater pain severity on average (B=.42[SE=.11], p<.001) and pain interference with daily quality of life (B=.43[SE=.13], p=.001). In follow-up analyses of individual FPQ-K items, beliefs that 1) most patients on pain medicine will become addicted and 2) pain medicine is dangerous and can interfere with breathing were both associated with greater pain severity (addictive: B=.12[SE=.06], p=.04; dangerous: B=.21[SE=.05], p<.001) and greater pain interference (addictive: B=.17[SE=.06], p=.01; dangerous: B=.20[SE=.06], p=.002).**Conclusions:** Most patients reported at least moderate pain on average in the past 24 hours despite being prescribed a long-acting opioid regimen. Patients with more negative beliefs about pain medication risks reported greater pain severity on average and greater pain interference. Results suggest potential barriers to optimal pain control among patients with opioid-related concerns. Longitudinal studies are needed to evaluate whether pain medication beliefs may influence pain over time, via patient pain management behaviors or gaps in patient-clinician communication about residual pain.

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THE EFFECTIVENESS OF HOPE- FOSTERING INTERVENTIONS IN
PALLIATIVE CARE: A SYSTEMATIC REVIEW AND META-ANALYSISNatalia Salamanca-Balen, MD¹, Man Chen, n/a², Thomas Merluzzi, Ph.D¹¹University of Notre Dame, Notre Dame, IN; ²Quantitative Methods, Department of Educational Psychology, THE University of Texas at Austin, Austin, TX**Background:** Hope is an important theme in chronic illness and palliative care (PC), and has been positively associated with well-being and quality of life (QOL) in end-of-life (EOL) patients. Also, interventions to increase hope or that measure hope as an outcome have appeared in the PC literature; however, no systematic review has evaluated the effectiveness of those interventions.**Primary Objective:** To describe and assess the effectiveness of interventions for PC patients that measure hope/hopelessness as an outcome.**Search Methods:** Electronic databases were searched up to September 2018, and the references of key primary studies and commonly-cited authors were inspected to find more relevant published papers.**Selection criteria:** Randomized controlled trials (RCTs), multiple-group quasi-experimental studies, and single group pre-post intervention studies with adult PC patients that measured hope/hopelessness as an outcome.**Data collection and analysis:** Two reviewers independently assessed the initial studies (N=2,779) based on title and abstract. Full text review resulted in the inclusion of 30 studies. Disagreements at each stage were resolved by consensus. For quantitative synthesis, we estimated random-effects models combined with robust variance estimation techniques when calculating average standardized mean difference. We conducted mixed-effects meta-regression for variables such as study design, type of therapy-psychotherapy, hope as primary versus secondary outcome, hope as a topic in the interventions, and hope-specific designed intervention.**Results:** Thirty studies (20 RCTs, 4 quasi-experimental, 6 single group pre-post studies) involving a total of 3,227 palliative care patients were included. For the RCTs and quasi-experimental studies, compared with usual/standard care, interventions significantly increased hope levels at a medium effect size (0.575; 95% CI: 0.2, 0.9; = 82%; high heterogeneity); but did not significantly reduce hopelessness (-0.08; 95% CI: -0.19, 0.02; = 0%; low heterogeneity). No significant subgroup differences were found. Results for single-group pre-post studies are forthcoming.**Conclusions:** A variety of interventions (most of them psychotherapies) were effective in increasing hope levels in PC patients. Given their heterogeneity and diversity, further analysis is needed to determine which specific components were effective. The relationship between hope and other important outcomes such as QOL, symptom control, anxiety, depression, and psycho-spiritual well-being, needs to be studied in order to have a fuller understanding of the advantage of increasing hope at the EOL. Further research is also needed to understand the conceptual and empirical relationship between hope and hopelessness given that interventions impacted hope but not hopelessness.

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CANCER MANAGEMENT SELF-EFFICACY AND PERCEIVED SOCIAL SUPPORT AMONG YOUNG ADULT SURVIVORS OF CANCER AT A SOCIAL NETWORKING EVENT

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Background: Young adult (YA) cancer survivors are known to face age-specific socio-emotional challenges, but research is needed to tailor supportive interventions. Aims: The study aimed to describe perceived social support and self-efficacy in managing cancer. It was hypothesized that these variables would impact emotional health.

Methods: YAs were surveyed before attending CancerCon, an educational and social networking event for adolescent and YA cancer survivors. Linear regression assessed relationships between perceived social support, self-efficacy in managing the practical and emotional aspects of cancer, and emotional health.

Results: Participants (N=140) averaged 31 years old (SD 6.5) and the majority were female (84%), White (84%), and non-Hispanic (88%). Most (95%) reported having access to necessary healthcare. About half (54%) were single, and a minority of participants were still in active treatment (10%). Moderate symptoms of anxiety (82%) and depression (66.9%) were reported (PHQ4; M=8.4, SD 3.2). Those in active treatment had higher levels of depression ($t(128)=-2.64$, $p=.009$). Higher levels of anxiety were reported by those who were diagnosed with cancer before age 18 ($t(127)=2.39$, $p=.018$), were currently younger than 30 years old ($t(130)=2.1$, $p=.038$), or who were diagnosed with cancer more than once ($t(39)=-2.03$, $p=.049$). More than half reported moderate to high self-efficacy in cancer management. Participants reported perceiving high levels of social support. Better cancer management self-efficacy was significantly correlated with more interpersonal appraisal support ($r=.56$, $n=90$, $p>.01$), more emotional support ($r=.42$, $n=45$, $p>.01$), greater satisfaction with health insurance ($r=.321$, $n=86$, $p>.01$), and fewer symptoms of anxiety and depression ($r=-.62$, $n=93$, $p>.01$). Linear regression, controlling for age, age at diagnosis, number of diagnoses, and treatment status, showed social support and cancer self-efficacy explained 41% of the variance in emotional symptoms ($R^2=.41$, $F(7, 32)=3.13$, $p=.012$). Better cancer management self-efficacy ($\beta=-.61$, $p=.001$) predicted fewer symptoms of anxiety and depression, but perceived availability of emotional support ($\beta=.05$, $p=.74$) and perception of more interpersonal appraisal support ($\beta=.03$, $p>.82$) did not.

Discussion: Interpretation of results is limited by the study's cross-sectional nature. However, relationships between better cancer management self-efficacy and fewer emotional symptoms could guide tailoring of interventions during the survivorship phase. Specifically, intervention research may explore whether cancer management self-efficacy and emotional symptoms predict adherence to the tasks of survivorship, such as medical follow-up, or whether bolstering cancer management self-efficacy among those still in active treatment may predict reduced symptoms of anxiety and depression.

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BARRIERS AND FACILITATORS TO CONNECTING CANCER SURVIVORS TO A COMMUNITY-BASED PHYSICAL ACTIVITY PROGRAM: LIVESTRONG AT THE Y

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Background: Physical activity rates in cancer survivors continue to be low despite the known benefits and availability of evidence-based programs. LIVESTRONG at the YMCA is a nationwide community-based physical activity program offered free of cost to cancer patients and survivors. We explored perceptions of LIVESTRONG at the Y program staff and graduates to better understand barriers and facilitators to program referrals and participation.

Methods: Participants were recruited using a snowballing sampling method in collaboration with the YMCA's national office. Program Directors (n=16), Instructors (n=4) and Program graduates (n=8) from 8 US states took part in semi-structured phone interviews. Interviews were digitally recorded, transcribed and evaluated using thematic analysis.

Results: Program Directors reported most participants hear about the program through their cancer care provider or word of mouth. Program Directors and Instructors reported struggling to bring more awareness about the program, make relationships with cancer clinic staff and recruit a greater number and more diverse population of participants. Program Directors stated, "The best way to reach more survivors would be using a referral system directly from providers (preferably electronic)". Programs with high enrollment reported, "We have a positive relationship with oncologists, a referral process in place, and we send providers feedback on patient participation". One program used an electronic referral embedded in an electronic medical record and was not only successful at enrolling a high number of participants but also a diverse population, which other programs reported struggling to do. Program graduates reported hearing about the program from a mix of providers and friends/family. They emphasized the importance of someone in their clinic providing information on physical activity programs because they would be more likely to listen to these trusted sources. They also preferred this information be given both before and after treatment.

Conclusions: Physical activity guidance and referrals for cancer patients/survivors deserves attention. Patients and survivors suggest the need for physical activity education, referrals and follow-up from someone on their healthcare team, while LIVESTRONG at the Y staff report the need for a better referral system to connect participants to the program. Cancer care provider referrals before and after treatment may expedite and increase participation in this community-based program.

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DISPOSITIONAL SHAME AND GUILT PREDICT DEPRESSIVE SYMPTOMS AND ANXIETY IN LUNG CANCER PATIENTS: THE MEDIATIONAL ROLE OF STIGMA

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Background: Lung cancer is a stigmatized disease that often necessitates considerable psychological adjustment. Lung cancer patients evidence higher rates of depression and anxiety, compared to adults with other cancers. It is crucial to understand and promote mental health in this population, particularly because it relates to important clinical outcomes (e.g., disease progression, survival). Most lung cancer patients report experiences of stigma—characterized by feelings of shame and guilt—which are associated with poor mental health outcomes. However, there is a gap in understanding psychosocial contributors to higher lung cancer stigma, which can be used to identify patients early in the care trajectory (e.g., at diagnosis) for psychosocial interventions that aim to reduce stigma and mitigate subsequent psychological maladjustment.

Purpose: This study investigated whether dispositional tendencies to experience shame and guilt (i.e., shame- and guilt-proneness) predicted higher lung cancer stigma and, in turn, higher depressive symptoms and anxiety.

Method: Participants ($N=56$, 57.1% female) were men and women receiving clinical consultations for lung cancer who completed validated questionnaires. Mediation modeling using bootstrapping was conducted to characterize relationships between shame- and guilt-proneness, stigma, depressive symptoms, and anxiety.

Results: Higher guilt-proneness was associated significantly with higher anxiety ($b=0.69$, $SE=0.28$, 95%CI [0.13, 1.26]) and higher shame-proneness was associated significantly with higher depressive symptoms ($b=0.56$, $SE=0.19$, 95%CI [0.18, 0.93]), beyond important sociodemographic, medical, and smoking-related characteristics. Additionally, higher lung cancer stigma significantly mediated the relationship between guilt-proneness and anxiety (indirect effect=0.43, $SE=.20$, 95%CI [0.08, 0.89]). However, stigma did not significantly mediate the relationship between shame-proneness and depressive symptoms.

Conclusions: Shame- and guilt-proneness relate to depressive symptoms and anxiety, respectively. The relationship between guilt-proneness and anxiety is explained, in part, by lung cancer stigma. These findings highlight shame- and guilt-proneness and internalized lung cancer stigma as important psychological processes related to depressive symptoms and anxiety in lung cancer patients. Patients who are high in shame- and guilt-proneness are at risk to experience high levels of stigma and may benefit from proactive supportive care interventions that address stigma and promote health and well-being.

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PREVALENCE AND PREDICTORS OF VITALITY/FATIGUE AMONG BREAST, PROSTATE AND COLORECTAL CANCER SURVIVORS IN THE SEER-MHOS DATASET

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Background: The cancer survivor population, currently estimated at 16.9 million, is expected to grow by almost 30% over the next 10 years. Approximately 45% of those undergoing cancer treatment and almost 30% of those post-treatment experience cancer-related fatigue (CRF). CRF is a debilitating condition common among cancer survivors which impairs quality of life. A better understanding of CRF change from pre to post-diagnosis and of the predictors of CRF change are needed to develop strategies to prevent and manage this condition.

Methods: We used the Surveillance, Epidemiology and End Results [SEER] Medicare Health Outcomes Survey [MHOS] linked data to characterize trajectories of fatigue and identify the demographic and clinical predictors of those trajectories in individuals diagnosed with breast, colorectal and prostate cancer. We measured CRF prior to cancer diagnosis (T0) and at two post-diagnosis timepoints [20 months, SD 20 months (T1) and 40 months, SD 32 months (T2)] harmonizing measures from the 4-item Vitality scale of the Short Form questionnaire (SF-36) and a single item from the Veterans Rand-12 questionnaire. Fatigue measures were scored on a t-scale from 0–100, with lower scores indicating worse fatigue. Using a multivariable regression model, we estimated the predictors of four distinct CRF trajectory patterns from pre- to post-cancer diagnosis.

Results: Overall, fatigue t-scores were similar by cancer site at all timepoints (~ 50 at T0, 46 at T1 and 45 at T2). This slight decline indicates worse fatigue over time. Older age, distant stage disease and major depressive disorder (MDD) symptoms were significantly associated with worse fatigue from T0 to T1 [$(\beta_{age}: -0.21, p < 0.0001)$ ($\beta_{distant\ stage}: -4.99, p = 0.001$) ($\beta_{MDD}: -5.31, p < 0.0001$)]. Four groups were identified in the trajectory analysis: Those who started with low levels of fatigue and remained low, those who started with high levels of fatigue and remained high, and two groups that started between the high and low groups but declined over time. The two groups with lowest levels of fatigue at all timepoints tended to have fewer MDD symptoms than the two groups with highest levels of fatigue at all timepoints (71.4% and 91.8% with no risk compared to 39.2% and 44.3%).

Conclusions: Our results suggest that evaluating those with cancer for MDD symptoms prior to treatment and considering their age and stage of disease may help providers better predict CRF trajectories. Targeted interventions to manage CRF may also focus on these risk factors.

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PART OF THE PROCESS—THE ROLE OF EMOTIONAL APPROACH COPING IN ADJUSTMENT AMONG YOUNG ADULTS WITH CANCER

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Objective: Cancer, particularly during young adulthood, can evoke difficult and novel emotions. During this time, cancer can interfere with normative development and challenge typical coping responses. Emotion-regulating coping efforts aimed at actively processing and expressing emotions might be particularly beneficial to cancer adjustment and have positive relationships with well-being and perceptions of positive growth. This study examined relationships of emotional approach coping and cancer-related and general indicators of adaptation among young adults with cancer.

Methods: Young adult cancer survivors ($N = 57$; $M_{age} = 34.1$, $SD = 4.9$, range = 24–42) were majority female (94.7%), White (93%), and had a breast cancer diagnosis (71.9%). On average, 2.5 years had passed since diagnosis. Participants completed measures of emotional approach coping (emotional expression, emotional processing), as well as general (depressive symptoms, resilience) and cancer-specific (fear of cancer recurrence, posttraumatic growth) adaptation as part of a larger study on technology-related communication.

Results: Multiple linear regressions revealed that greater use of emotional expression was associated with lower depressive symptoms ($\beta = -0.27$, $p < .05$) and higher posttraumatic growth ($\beta = 0.41$, $p < .01$); while greater use of emotional processing was associated with higher resilience ($\beta = 0.32$, $p < .05$), and higher posttraumatic growth ($\beta = 0.42$, $p < .01$). No additional significant relationships were found.

Conclusions: While both facets of emotional approach had associations with better adaptation, findings highlight differing relationships between emotional expression and emotional processing among young adult cancer survivors. Interventions aimed at increasing emotional expression and processing may prove useful in facilitating positive adjustment and strengthening young adult cancer survivors' ability to cope with the diverse effects of disease and treatment.

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DOES THE BROADEN-AND-BUILD THEORY EXPLAIN REDUCTION IN SOCIAL DISRUPTION AFTER A BRIEF RELAXATION PROTOCOL FOR BREAST CANCER?

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Introduction: There is a growing cohort of women surviving early-stage breast cancer (BCa), many of whom struggle with physical, emotional, and social disruption in the months following treatment. Brief cognitive-behavioral (CBT) and relaxation skills training (RT) interventions addressing these concerns are becoming more prevalent. Yet, mechanisms for these protocols are still emerging. Using the Broaden-and-Build Theory of positive emotions as a theoretical model, this study examined whether short-term, CBT- and RT-related increases in positive affect mediate longer-term reductions to social disruption in women undergoing treatment for BCa.

Method: Women ($N=183$) with stage 0-III BCa were enrolled in a randomized-controlled trial comparing 5-week group-based CBT, RT, and health education (HE) interventions. Medical and demographic variables, and scores on the Affect Balance Scale-Positive Affect subscale (PA) and Sickness Impact Scale-Social Interactions subscale (SIPsi) were collected at baseline (T1), 2- (T2), 6- (T3), and 12-month (T4) follow-up. Latent change score and growth models were specified in Mplus to test 6- and 12-month intervention effects on absPOS and SIPsi, respectively; models were then combined into a parallel-process latent growth/latent change model to assess mediation. Covariates were age, stage, and type of adjuvant treatment.

Results: RT demonstrated larger reductions in SIPsi across T1-T4, compared to HE ($B = -.31$, $SE = .11$, 95% CI $[-.44, -.01]$, $p < .05$) and CBT groups ($B = -.33$, $SE = .11$, 95% CI $[-.45, -.02]$, $p < .05$). Residualized latent change in PA from T1 to T3 was significant ($B = .16$, $SE = .05$, 95% CI $[.06, .26]$, $p < .001$) but this was not driven by condition. Indirect paths specified in the parallel-process latent growth/latent change model were not significant. However, the slopes of PA and SIPsi were related ($B = -.65$, $SE = .22$, 95% CI $[-1.00, -.15]$, $p < .05$).

Conclusions: A 5-week RT protocol can produce long-term reductions to SIPsi among women undergoing primary treatment for early-stage BCa. Residualized change in PA did not mediate RT-related effects on SIPsi but the latent slopes of these variables trended together across the breast cancer trajectory. Additional work is needed to elucidate how relaxation strategies motivate women with BCa to resume social activities, and how change in PA might be related to increased social engagement. Such data could refine the development of brief interventions for survivors of BCa.

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RANDOMIZED TRIAL OF AN ACCEPTANCE INTERVENTION FOR ANXIOUS CANCER SURVIVORS: PATIENT-REPORTED AND HEALTHCARE USE OUTCOMES

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Background: Elevated anxiety, driven largely by fear of cancer recurrence, represents a common, chronic, and often unaddressed concern among cancer survivors, and predicts both intensive and avoidant use of healthcare. We present findings from a randomized clinical trial evaluating the efficacy of a 7-week acceptance and commitment therapy (ACT) group intervention designed to address the psychosocial needs of anxious cancer survivors.

Methods: Randomized, multi-site clinical trial of the group ACT intervention versus enhanced usual care (EUC) for cancer survivors with moderate to high anxiety symptoms, who were within 2 years of finishing cancer treatment (n=139). The trial was embedded within a large network of community-based oncology private practice clinics and onsite social workers delivered the intervention. Psychosocial outcomes (general anxiety symptoms [primary]; fear of cancer recurrence, cancer-related trauma symptoms, vitality, depression symptoms, sense of life meaning, healthcare utilization [secondary]) were assessed at Pre-, Mid-, Post-intervention, 3- and 6-month follow-up and analyzed using full information maximum likelihood growth modeling. Medical utilization was tracked throughout the study and analyzed using bootstrap regression modeling with bias-corrected estimates.

Results: Condition by time interactions from Pre to 6-month Follow-up showed that ACT led to significantly greater reductions in fear of cancer recurrence and cancer-related trauma symptoms, significantly greater increases in vitality, and marginally greater reductions in general anxiety symptoms, than the EUC control condition. The ACT condition also evidenced significantly fewer missed medical appointments than EUC. Across condition, depression diminished and sense of life meaning increased, with no effects for condition over time. Baseline levels of anxiety symptoms or coping through avoidance moderated general anxiety, vitality, and life meaning outcomes. Specifically, cancer survivors with higher anxiety or avoidance levels benefitted most from ACT relative to EUC. Social workers also showed strong adherence to the intervention.

Discussion: A group ACT intervention led to better fear of recurrence and trauma symptom outcomes for anxious cancer survivors and fewer missed medical appointments than EUC. We discuss the implications of study findings.

Trial pre-registration: Clinicaltrials.gov NCT02550925.

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ARE ESTIMATES OF ANXIETY DISORDER PREVALENCE IN CANCER POPULATIONS ACCURATE?

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Background/Purpose: Elevated anxiety represents one of the most common and enduring symptoms experienced by cancer survivors. Thus, the purpose of this systematic review was to assess the accuracy of estimates of anxiety disorder prevalence among cancer survivors. Reviewing the literature on anxiety and mood disorders among cancer survivors, meta-analyses reported surprisingly low prevalence of anxiety disorders among cancer survivors relative to mood disorders and the general population. We hypothesized that the individual studies comprising these meta-analyses may have failed to assess the full range of anxiety disorders, thereby underestimating the prevalence of anxiety disorders overall.

Methods: We conducted a search in PubMed and Google Scholar for meta-analyses that estimated anxiety disorder prevalence rates among adult cancer survivors. Within eligible meta-analyses (n = 4), we systematically examined the unique individual studies (n = 53) to determine the extent to which they assessed the full range of anxiety disorders among cancer survivors relative to major depressive disorder.

Results: Individual studies in meta-analyses assessing anxiety disorder prevalence among cancer survivors almost universally reported the prevalence of major depressive disorder (96%). However, apart from GAD (assessed in 49% of studies) and panic disorder (assessed in 34% of studies), less than one-third of the studies reported the prevalence of any other anxiety disorder. Social anxiety disorder and specific phobia, the most prevalent anxiety disorders in general populations, received the least attention among cancer populations, reported in only 21% and 8% of studies respectively. Thus, studies that report anxiety disorder prevalence among cancer survivors base estimates on only a few anxiety disorders and omit most others, thereby systematically underestimating the prevalence of anxiety disorders among cancer survivors. This bias was not evident for mood disorders.

Conclusions: Despite reporting the prevalence of 'anxiety disorders' as a category, studies in cancer populations rarely assessed the full range of anxiety disorders. The omitted anxiety disorders show high prevalence in general populations. Thus, the evidence suggests that these studies and the meta-analyses that rely upon them have systematically underestimated the prevalence of anxiety disorders in cancer populations, likely considerably so. We discuss clinical and research implications.

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COPING, ILLNESS PERCEPTIONS, AND DEPRESSION IN UVEAL MELANOMA: EXAMINING COMMON SENSE AND COPING RESOURCE MODELS

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Background: A rare cancer, uveal melanoma (UM) affects five in one million adults per year. UM patients endorse notable rates of unmet psychological supportive care needs. Research on predictors of mental health outcomes in UM largely has focused on disease-related factors (e.g., metastatic risk), with mostly null results. In this prospective, longitudinal study, we tested the Common Sense (CS; Leventhal, 1980) and Coping Resource Models (CR; Moos, 2003). Accordingly, we hypothesized mediational pathways via illness perceptions and coping strategies on depressive symptoms over one year after UM diagnosis. We also examined interactions between specific illness perceptions and coping processes.

Methods: Participants were patients (N=61) diagnosed with UM at the UCLA Jules Stein Eye Institute who completed baseline assessments at a pre-diagnosis medical visit (T1) and follow-up assessments at one week (T2), three months (T3), and one year after UM diagnosis (T4). Validated measures of depression (CES-D), disease-related coping (COPE), and illness perceptions (BIPQ) were administered. Multiple regression analyses tested associations of coping and illness perceptions with depressive symptoms across time.

Results: Coping through avoidance of the “eye problem” at T1 ($b=11.44, p=.004$) and the UM diagnosis at T2 ($b=8.56, p=.005$) predicted higher depressive symptoms at T4. Perceptions of greater illness chronicity ($b=.80, p=.038$) and lower control over one’s illness ($b=-.84, p=.031$) at T2 also predicted T4 CES-D scores. Mediation analyses testing the application of CR and CS models did not reach statistical significance. Significant avoidance coping x chronicity perception interactions at T1 ($b=1.96, p=.037$) and T2 ($b=2.08, p=.032$) indicated that the positive links of pre- and post-UM diagnosis avoidance coping with T4 depressive symptoms were stronger for patients with perceptions of prolonged (versus limited) illness chronicity (T1 $b=10.79, p=.032$; T2 $b=13.53, p=.001$).

Conclusions: Engagement in avoidance coping, even prior to cancer diagnosis, and perceptions of prolonged illness chronicity at the time of diagnosis are independent and joint predictors of 12-month depressive symptoms in adults with UM. Although the data did not support the CR and CS mediational models, our findings highlight the unique and combined influence of coping and illness perceptions on psychological adjustment to chronic illness, which is consistent with both theoretical frameworks.

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PATIENTS’ EXPECTATIONS OF THE BENEFITS OF LARGE-PANEL GENOMIC TUMOR TESTING

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Background: Large-panel genomic tumor testing (GTT) is a new technology that promises to make cancer treatment more precise, but also has uncertain utility for individual patients. Currently, GTT has been shown to benefit relatively few patients; however, patients may have little understanding and unrealistic expectations of its benefits. The goal of this project is to assess expectations of the benefits of GTT among cancer patients in community oncology practices.

Methods: A survey assessing expectations of the benefits of GTT was administered to cancer patients participating in a statewide study of GTT implementation, prior to receipt of testing. Descriptive and regression analyses were conducted to assess expectations and the factors associated with these expectations.

Results: The study sample (N = 900) consisted of patients with a range of cancer types (most frequent were: 15.6% lung, 10.7% breast, 8.9% brain, 7.8% colon) and cancer stages (4.5% Stage I, 5.6% Stage II, 17.3% Stage III, 66.4% Stage IV). The mean age was 63.6 years (SD = 11), and 426 (58.4%) were female. Generally, patients had high expectations of benefiting from GTT; 80.2% thought GTT was moderately likely to help their doctor choose the best treatment for them, and 62.5% thought GTT was moderately likely to give them greater peace of mind. Greater expectations for GTT ($\beta = .12, p < .002$) were positively associated with age and negatively associated with knowledge of GTT ($\beta = -.16, p < .0001$).

Conclusions: Patients have relatively high expectations of the benefits of GTT, which are associated with age and knowledge of GTT. More research is needed to understand the causes of patient expectations of GTT, and their effects of health behaviors and outcomes.

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PREVALENCE OF HEALTH BEHAVIORS AMONG CANCER SURVIVORS IN THE UNITED STATES: HOW FAR HAVE WE COME?

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Background: The number of cancer survivors in the U.S. is expected to reach 21.7 million by 2029, with roughly 67% of survivors living ≥ 5 years post-diagnosis. Survivors are at increased risk for late/ long-term health complications and recurrence; however this risk may be attenuated by a healthy lifestyle. This study updates a 2005 benchmark study in the National Health Interview Survey (NHIS) of prevalence estimates of smoking, physical activity, and alcohol consumption by cancer history. Our goal was to understand current health behaviors by cancer history in a nationally representative sample to inform behavior change priorities for cancer survivors.

Methods: We analyzed data from the NHIS, a cross-sectional household interview survey, combining datasets from 2013–2017. There were 164,692 adults in the combined sample, 12,648 of whom were identified as having a history of cancer. Using weighting to account for survey sampling techniques, we calculated prevalence of smoking, physical activity, and alcohol consumption by cancer history, age, and cancer site.

Results: Overall, a slightly lower percentage of those with a history of cancer reported current smoking (14.1% vs 16.8%) and fewer reported moderate to heavy drinking (18.8 vs 21.9%) than those without a history of cancer. A lower percentage of cancer survivors met physical activity guidelines (14.2 vs 21.1%) than those without a cancer history. However, we found differences in these behaviors by age; individuals aged 18–39 with a cancer history reported a current smoking prevalence 31.3% compared to 16.8% among those without a history of cancer and were less likely to meet physical activity guidelines (22.0% vs 28.6%). Among those age 65+ a slightly greater percentage of cancer survivors reported moderate to heavy drinking (18.0% vs 15.7%). When we analyzed behaviors by cancer site we found that those with a history of respiratory or gynecologic cancers were more likely to smoke than breast, prostate, colorectal or leukemia/lymphoma survivors. Prostate cancers survivors were more likely to be moderate/heavy drinkers than other cancer sites. Respiratory cancer survivors were less likely to meet physical activity guidelines.

Conclusion: Prevalence of poor health behaviors current smoking, physical inactivity, and moderate to heavy drinking were all lower than the previous report 14 years ago. Still, targeted interventions by age and cancer site are needed to improve health behaviors.

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HEALTH BEHAVIORS OF CANCER SURVIVORS FROM THE NATIONAL HEALTH INTERVIEW SURVEY (2005–2015)

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Background: This study examines population-based survey data from the National Health Interview Survey (NHIS) from three time points: 2005, 2010, and 2015. Prior research utilizing the NHIS demonstrates that cancer survivors exhibit similar health behavior profiles to controls for smoking and alcohol consumption, but cancer survivors are more likely to meet physical fitness standards (Bellizzi et al., 2005). The purpose of the current research is to examine additional health behaviors included within the NHIS that inform cancer prevention (e.g., diet and sleep) while also updating previously examined health behaviors.

Method: Data was collected from 92,257 participants whose cancer status was obtained via self-report (e.g., “Have you ever had cancer?”). 8,050 participants reported having had cancer (2,428 in 2005; 2,333 in 2010; 3,289 in 2015). Physical activity, alcohol use, smoking status, diet, and sleep were assessed. Data were weighted and analyzed in SPSS. Demographic and physical function covariates were included in all analyses.

Results: When comparing cancer survivors to those without a history of cancer (2005–2015), survivors were 13% more likely to meet physical activity recommendations ($OR = 1.13$, $CI = 1.03, 1.23$) and 7% more likely to be current drinkers ($OR = 1.07$, $CI = 1.00, 1.14$). Cancer survivors did not differ from those without a history of cancer in their likelihood of being a smoker, meeting dietary guidelines, or getting adequate sleep. Cancer survivors exhibited a significant increase in physical activity from 2005 to 2010 ($p = .013$) but not 2010 to 2015, and a significant decrease in self-reported smoking status from 2010 to 2015 ($p < .001$) but not 2005 to 2010. No significant changes were found for cancer survivors drinking status, diet, or amount of sleep from 2005 to 2010 or 2010 to 2015.

Conclusion: Findings reveal that cancer survivors, compared to controls, are more likely to meet physical activity guidelines, supporting prior research. Cancer survivors are also more likely to report being current drinkers, compared to controls, providing novel evidence that alcohol consumption may need to be examined as a risk factor in this cohort. No differences were found in diet or sleep. Within the cancer survivor cohort physical activity increased and smoking decreased across time. Results from this study update previous health behavior self-report data from the NHIS among cancer survivors and extends it by examining diet and sleep. These results may help inform where interventions might be focused to prevent cancer recurrence among cancer survivors.

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ENVIRONMENTAL CORRELATES OF OBJECTIVELY-MEASURED MODERATE TO VIGOROUS PHYSICAL ACTIVITY IN BREAST CANCER SURVIVORS

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Purpose: Moderate and vigorous physical activity (MVPA) is associated with reduced treatment-related side effects and improved disease outcomes and quality of life among breast cancer survivors (BCS), but most BCS do not meet MVPA recommendations. Environmental factors have been shown to be associated with MVPA in the general population, but few studies have examined these relationships in BCS. This study examined relationships among geographical region, natural environment characteristics, and perceived environmental walkability with MVPA among BCS.

Methods: As part of baseline assessments, insufficiently active BCS [$n=269$; $M_{age}=52.5$ (SD=9.9)], who enrolled in a U.S. nationwide MVPA promotion intervention, wore accelerometers on the hip for 7 consecutive days during all waking hours. Mailing addresses were used to define geographical region and obtain natural environment data (i.e. temperature, precipitation, and day length) from the National Climatic Data Center. BCS completed the Neighborhood Environment Walkability Scale to assess perceived built environment factors (e.g. residential density, land use diversity and access, neighborhood surroundings). Linear regression analyses examined relationships between potential environmental correlates and baseline MVPA minutes/day controlling for relevant covariates, including age, income, education, cancer stage, and treatment with chemotherapy and/or radiation.

Results: BCS averaged 12.5 (SD=11.7) MVPA minutes/day (min/d). BCS living in the West averaged significantly more MVPA than those in the Southwest ($M_{diff}=6.9$ min/d, $p=0.03$). Southwest BCS averaged significantly more MVPA than Midwest BCS ($M_{diff}=7.1$ min/d, $p=0.03$). No other geographical region differences were significant. BCS in locations with no precipitation ($B=3.4$, $p=0.02$) and more hours of daylight/day ($B=3.4$, $p=0.017$) engaged in more MVPA min/d. Greater residential density ($B=0.2$, $p=0.01$), land use access ($B=1.5$, $p=0.04$), and lack of cul-de-sac ($B=1.4$, $p=0.02$) were significantly correlated with higher MVPA min/d.

Conclusions: Findings suggest geographical region, natural environment, and perceived built environment factors may significantly influence objectively measured MVPA among BCS. Future MVPA promotion interventions should consider the best way to address multi-level barriers, including environmental features, to improve intervention efficacy to increase MVPA and, ultimately, improve health outcomes among BCS.

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ATTACHMENT, COMMUNICATION, AND PHYSICAL WELL-BEING AMONG COUPLES COPING WITH CANCER

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A couple's ability to cope with the medical and psychosocial challenges of cancer is often linked to their perceptions of each other's availability and responsiveness. Attachment is an important contributor to couples' communication, which in turn can influence mental and physical well-being. This study examined associations between attachment style and physical well-being, and the mediating role of couple communication.

Participants were 166 dyads enrolled in a larger observational study examining couple communication in cancer. Inclusion criteria for patients were: stage II–IV breast, lung, colon, or rectal cancer; within 2 years of diagnosis of current cancer stage; received or receiving systemic treatment, with a life expectancy of at least 6 months. Patients also needed to be married or in a committed relationship. Recruitment took place at the Duke Cancer Institute and the Seattle Cancer Care Alliance. Couples independently completed self-report measures of adult attachment orientations (e.g., anxious or avoidant), emotional disclosure, holding back from disclosure, and physical well-being. We examined potential indirect associations between a dyad member's scores on dimensions of anxious and avoidant attachment and the partner's physical well-being, as mediated by the dyad member's own communication behavior (holding back or disclosure) using an actor-partner interdependence model (APIM) path analysis for each of the four possible combinations of attachment and communication behavior.

Overall, participants had a mean age of 52.72 years (SD 12.8); 86.6% Caucasian. Patients were 65% female and partners were 63% male. Results indicated that anxious and avoidant attachment were positively associated with holding back and disclosure, which in turn were inversely associated with physical well-being. Moreover, spousal anxious and avoidant attachment were associated with patient reports of lower physical well-being through spouse holding back (IE = -0.45, 95% CI = -0.91 – -0.11; IE = -0.50, 95% CI = -0.94 – -0.18). A similar pattern emerged for spouse anxious attachment and patient physical well-being through spouse disclosure (IE = -0.32, 95% CI = -0.71 – -0.10).

To our knowledge, this study is the first to examine communication as a mechanism underlying the association between attachment and physical well-being, and to examine both patient and partner effects. Attachment appears related to communication quality (e.g., both how communication exchanges are perceived and received among couples). For couples coping with cancer, attachment insecurity may influence communication, which in turn may affect physical health and relationship adjustment. These findings demonstrate a need for development of communication skills-training interventions for couples coping with cancer who may hold back from disclosure in the context of attachment insecurity.

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MULTI-THEORY MODEL AND DETERMINANTS OF HPV VACCINATIONS: A CROSS-SECTIONAL STUDY AMONG GHANAIAAN ADOLESCENTS.

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Introduction: The human suffering and health economic burden of Human Papillomavirus (HPV) related cancers represents an unmet medical need in Ghana. The HPV related cancers such as cervical, oral, neck, and head cancers are among the leading cause of cancer deaths in Ghana. Prophylactic HPV vaccines such as Cervarix®, Gardasil®, and Gardasil 9® are efficacious in preventing HPV related cancers. However, the HPV vaccination uptake in Ghana is very low. Studies that utilize theoretical frameworks to identify contributory factors to HPV vaccination uptake in Ghana are limited.

Purpose: The purpose of this study was to use Multi-theory model constructs (i.e. participatory dialogue, behavioral confidence, physical environment, practice for change, social environment, and emotional transformation) to predict initiation and completion of HPV vaccination series among Ghanaian adolescents.

Methods: Adolescents (n=285) between the ages of 12 and 17 years old were recruited from four schools in Ghana. They completed a 44-item survey that measured demographic, predictor, and outcome variables. The predictor subscales included perceived belief, participatory dialogue, behavioral confidence, physical environment, practice for change, emotional transformation, and social environment. The outcome variables included the initiation and completion of the HPV vaccination series. We used 3-items for each predictor subscale and 1-item for each outcome subscale, and each item was measured on a 5-point response scale. Using hierarchical linear regression models, we identified predictors of adolescents' likelihood of initiating and completing the HPV vaccination series.

Results: Most participants were female (91.2%), senior high school students (60.0%), and Christians (96.8%). Many of the participants had neither heard about HPV (92.3%) nor HPV vaccinations (95.4%). Significant predictors of adolescents' likelihood of getting the first dose of HPV vaccination were perceived beliefs and change in a physical environment ($p < 0.001$), with each variable accounting for 6.1% and 8.8% of the variance respectively. Significant predictors of adolescents' likelihood of completing HPV vaccination recommended series were perceived beliefs, practice for change, and emotional transformation ($p < 0.001$), with each variable accounting for 7.8%, 8.1% and 1.1% of the variance respectively.

Conclusion: The findings from our study underscore the lack of awareness of HPV related cancers among adolescents in Ghana. HPV vaccination initiation key predictors included perceived beliefs and a change in the physical environment. Perceived beliefs, practice for change, and emotional transformation were key predictors of HPV series completion. Future HPV vaccination intervention efforts should focus on addressing these modifiable factors to increase HPV vaccination uptake among adolescents in Ghana

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THE SOCIAL CONTEXT OF CANCER FOR SEXUAL MINORITY WOMEN: A SYSTEMATIC REVIEW

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Intimate partners and other informal caregivers often provide unpaid tangible, emotional, and decision-making support for cancer patients. Less is known about the social context for sexual minority women (SMW; e.g., lesbian, gay, bisexual, queer, same-gender partnered) with cancer.

This systematic review followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and was designed to examine peer-reviewed, empirical research in English about the cancer experiences of SMW and their partners/informal caregivers. The review centered on 4 questions: 1) What social support do SMW with cancer receive from partners/caregivers? 2) What effect does cancer have on the informal caregiving relationships or intimate partnerships of SMW with cancer? 3) What effects does cancer have on partners/caregivers of SMW with cancer? 4) What interventions exist to support partners/caregivers of SMW or to strengthen the patient-caregiver relationship.

After removing duplicates, 336 abstracts were each screened by teams of 2 coders; 32 full-text articles were assessed for eligibility, and 17 were included in a qualitative synthesis. Most studies were U.S.-based, involved breast cancer, included intimate partners, had primarily white/Caucasian samples, were cross-sectional, and did not ground research questions in theory. Participants reported that partners/caregivers often provide important social support for sexual minority women with cancer, including emotional support, decision-making support, and tangible support (e.g., housework). Effects of cancer on relationships with partners/caregivers were mixed, with some studies finding relationships remained stable and that cancer increased closeness, and others suggesting relationships were often disrupted. Participants reported that partners/caregivers often experience distress and may be affected by factors such as discrimination, discomfort disclosing sexual orientation, and a lack of sexual minority-friendly services. No study involved an intervention aimed at partners/caregivers or the dyadic relationship.

More work is needed to understand SMW with cancers other than breast cancer; samples that are racially, ethnically, or economically diverse; and samples outside the U.S. Longitudinal research will allow examination of the evolution of relationships and patterns of mutual influence over time. These next steps are necessary to develop interventions to support SMW with cancer and the people close to them.

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FEASIBILITY AND EFFICACY OF AEROBIC & RELAXATION TRAINING FOR IMPROVING FATIGUE IN BREAST CANCER SURVIVORS: A PILOT RCT

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Chemotherapy has been linked to enduring post-treatment fatigue in breast cancer survivors (BCS). Improvement from separate aerobic exercise training and mindfulness interventions is promising, yet the feasibility and efficacy of a combined approach is unknown. The purpose of this pilot randomized controlled trial (RCT) was to test the feasibility and efficacy of a combined aerobic exercise and technology-based relaxation training compared (AT+RT) to standalone aerobic training (AT) and relaxation training (RT), in an acute paradigm involving pre and post-testing among three training sessions. The AT+RT group was hypothesized to have more favorable outcomes in fatigue and enjoyment relative to the other groups. Participants were screened for cognitive impairment, hearing difficulties, colorblindness, difficulty in exercise, and lack of appropriate cancer treatment. Forty participants ($M_{age} = 57.33 \pm 8.75$, $M_{BMI} = 27.38 \pm 5.27$) completed baseline testing, three 90-minute intervention sessions with three intra-session assessments (pre, mid, and post), and follow-up testing >24 hours between each session. A battery of assessments was repeatedly administered including novel questions about enjoyment, ease of use, & satisfaction, (e.g., "I was satisfied with the effectiveness of my activities for reducing fatigue"), the *Piper Fatigue Scale* (PFS), among other questionnaires, and assessments of cognitive functioning. A one-way ANOVA revealed significant group differences in enjoyment favoring AT+RT ($M = 7.00 \pm 0.00$), relative to AT ($M = 6.31 \pm 1.03$) and RT ($M = 6.79 \pm 0.11$). A repeated-measures ANOVA revealed reductions in fatigue (PFS) to be large in scale ($\eta^2 = 0.17$) and in favor of AT+RT ($M\Delta = -1.55$, AT $M\Delta = -0.61$, RT $M\Delta = -0.60$), although the effects were attenuated after adjusting for covariates (BMI, global score from the *Godin Leisure Time Questionnaire*, treatment composite variable incorporating drug type and time since end of usage, age, and Memory Self-Efficacy). Further, the AT+RT group was the only group to score in the "mild" fatigue level, while the other groups remained "moderate." This study offers preliminary evidence for the feasibility of an acute multi-modal intervention involving aerobic exercise and relaxation training among BCS. Also, preliminary findings suggest the potential for a new method to improve chronic fatigue reduction among BCS, although a larger and longer trial is warranted.

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ONLINE COUPLE-BASED MEDITATION INTERVENTION FOR BRAIN TUMOR PATIENTS AND THEIR SPOUSES

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Purpose: Although patients with primary and metastatic brain tumors (BT) and their spouses are at risk of experiencing high symptom burden, they are often excluded from psychosocial intervention studies. Thus, we sought to examine the feasibility and preliminary efficacy of a couple-based mediation (CBM) program targeting symptom and wellbeing outcomes.

Methods: Couples completed validated baseline self-report measures and were randomized to the CBM or a usual care control (UC) group. Couples in the CBM groups attended four, weekly (60 min. each) therapist-led sessions that were delivered via FaceTime. The CBM program focused on cultivating mindfulness, compassion, gratitude and purpose and integrated emotional disclosure exercises. Both groups were reassessed 6 and 12 weeks after baseline.

Results: We approached 60 eligible dyads of which 37 (62%) consented and 35 (95%) were randomized and 22 (63%) completed all assessments. Attrition was mainly due to patients' death ($n=8$). Patients (57% male; mean age=57 years) and partners' (59% female; mean age=54 years) in the CBM group attended a mean of 3.33 sessions ($SD=1.09$). All participants in the CBM group reported the intervention as beneficial and useful and would recommend this program to other couples. For patients, significant group differences ($P < .05$) with medium to large effects sizes in favor of the CBM group were found for cognitive ($d=1.05$) and general disease symptoms ($d=.93$), relationship wellbeing ($d=.68$) and compassion ($d=.96$). No significant group differences were revealed for spouses.

Conclusions: It seems to be feasible, acceptable and possibly efficacious to deliver a dyadic intervention via FaceTime to BT couples. Although both patients and spouses in the CBM group rated the intervention as beneficial, significant group differences with medium to large effect sizes were only found for patients. The intervention may have possible benefits for spouses during bereavement.

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THE EFFECTS OF MENOPAUSAL SYMPTOMS ON PHYSICAL ACTIVITY IN AN EXERCISE INTERVENTION FOR FEMALE CANCER SURVIVORS

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Cancer survivors are at risk for severe symptoms and medical sequelae that may be attenuated by physical activity (PA), yet sedentary lifestyles are common. Self-regulation theories and research suggest that symptoms may be substantial barriers to PA. Symptoms of menopause affecting many female cancer survivors such as hot flashes, fatigue, pain, and cognitive symptoms may also be barriers to PA. Therefore, the aim of this project was to examine the effect of baseline menopausal symptoms on PA over the course of an exercise intervention for peri- and post-menopausal cancer survivors. The current project was a secondary analysis of the Yale Fit study, a 12-month randomized clinical trial of an exercise intervention in comparison to home-based health promotion ($N=154$, mean age=58). Menopausal symptoms were self-reported using the Breast Cancer Prevention Trial Symptom Checklist (BCPT-SCL), a measure of severity of 42 symptoms on a 5-point Likert scale (0=Not at all, 4=Extremely). PA was self-reported using the International Physical Activity Questionnaire (IPAQ), which provides an estimate of PA in Metabolic Equivalent of Task (MET) minutes per week. Latent Class Analysis (LCA) was used to determine subgroups of participants based on their profile of severity for 12 selected symptoms at baseline (hot flashes, headaches, aches/pains, joint pain, swelling in extremities, muscle stiffness, weight gain, poor body image, forgetfulness, tendency to take naps, difficulty concentrating, and easy distraction). Linear mixed effects modeling was then used to examine the effects of symptom subgroup on PA over time, and the interaction between symptom subgroup and intervention group, controlling for age and Aromatase Inhibitor. There were 153 participants with sufficient data for analysis. LCA showed 3 subgroups: class 1 ($n=56$) had moderate+ severity for hot flashes, joint pain, and poor body image; class 2 ($n=24$) had moderate+ severity for hot flashes, aches/pains; joint pain, poor body image, forgetfulness, tendency to take naps, difficulty concentrating, and easy distraction; class 3 ($n=73$) had low severity on all symptoms except hot flashes. Linear mixed-effects modeling showed no main effect of symptom subgroup or interaction effects with time or intervention group on PA ($p > 0.05$). Findings indicated that there were subgroups of women based on their menopausal symptoms at baseline, but these subgroups did not predict their PA over the course of the exercise intervention.

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PERCEPTIONS OF TUMOR GENOMIC PROFILING IN AFRICAN AMERICAN CANCER PATIENTS: AN IN-DEPTH QUALITATIVE ANALYSIS

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Background: Tumor genomic profiling (TGP) is used to examine targetable mutations for personalized oncology, but many patients are unaware it may also detect secondary hereditary cancer risks. African Americans (AA) have an increased cancer risk, lower health literacy and genetic knowledge, and higher medical distrust. Physicians may need to target communicate about TGP with these patients and understand how they perceive of genetic risk, yet little is known about AA's TGP perceptions or their communication needs.

Methods: Five focus groups with AA cancer patients ($n=34$) were conducted at a comprehensive cancer center and the oncology unit of an urban teaching hospital. Groups were audio recorded and transcriptions analyzed. Codes were derived deductively from the moderator's guide and inductively through emergence until thematic saturation.

Results: Participants were 76% female, age range of 27–76, and about 60% had \leq high school diploma. Over 70% had never heard of TGP. All groups discussed stigma of cancer and lack of communication within the family as significant issues when it came to treatment decisions and genetic testing. Key differences in medical trust were observed with those in the urban hospital expressing more mistrust of medical information; participants from both sites were skeptical of having genetic information as part of their medical record. Feelings were mixed related to receipt of secondary genetic information, but most agreed that they would rather doctors talked to them about these results than a genetic counselor. Many were concerned about having to share genetic information with family, or what it might mean for their own health, indicating that specialized cancer communication may need to occur with AA patients.

Conclusion: While TGP is a key advance in cancer care, understanding the unique information needs of AA patients is critical to developing meaningful interventions to assist with informed decision making. Physicians need to think about how to incorporate targeted messaging about TGP that incorporates these beliefs in AA patients or risk exacerbating medical mistrust of information.

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PHYSICAL ACTIVITY INTERVENTIONS: STATE OF THE SCIENCE FOR COLORECTAL CANCER SURVIVORS

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Background: With the growing number of colorectal cancer survivors (CRCS), theory-based, high-quality physical activity (PA) interventions are needed to promote quality and quantity of life.

Purpose: This systematic review and meta-analysis synthesized theory-based PA interventions among CRCS.

Methods: Using PubMed, PsycINFO, CINAHL, MEDLINE, SportDiscus, and Cochrane databases, studies including CRCS participants, a PA outcome, a behavioral theory/model or behavior change techniques (BCT), and a randomized research design were identified. Two reviewers coded BCT, intervention reproducibility (Template for Intervention Description and Replication–TIDier), risk of bias, and quality of evidence.

Results: From an initial screen of 1328 articles, 10 RCTs met our inclusion criteria. The Transtheoretical Model ($n=3$), Social Cognitive Theory ($n=3$), and Theory of Planned Behavior ($n=2$) were the most used theories. “Goal setting (behavior)” ($n=10$), “goal setting (outcome)” ($n=10$), “action planning” ($n=9$), and “problem solving” ($n=9$) were the most commonly used BCTs. Interventions modalities were primarily print material based ($n=4$) and telephone counselling ($n=4$). Findings demonstrated that theory-based PA interventions are successful at increasing PA among CRCS as meta-analysis evidenced a small-to-moderate effect size of 0.26. According to the TIDier, Items 3 (information about location of materials used), 9 (modifications during the intervention), and 12 (assessment of intervention adherence or fidelity) hindered intervention replicability. Serious risk of bias resulted from lack of blinding and bias in the measurement of outcomes by assessors.

Conclusions: In-depth theoretical applications are needed for PA interventions that minimize bias and improve outcomes measurement. Intervention adherence and fidelity, as well as theoretical construct measurement pre- and post-intervention, will enhance the behavioral research enterprise.

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PATIENT-REPORTED OUTCOMES IN HNC SURVIVORS: EVALUATING THE “RURAL DISADVANTAGE”

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Background: Approximately 4% of all cancers in the US are head and neck cancer (HNC). The sequelae of HNC and its treatment are extremely visible (e.g. facial disfigurement) making HNC one of the most emotionally traumatic cancers to experience. Many HNC patients experience psychological distress and functional impairments that affect their quality of life (QOL) during and after recovery. Further, research now supports a possible “rural disadvantage,” meaning cancer patients who live in rural locations have poorer physical and psychological outcomes than their urban counterparts. Thus, the present study aimed to examine whether 6-month and 1-year HNC patient psychosocial outcomes differ in patients living in rural v. urban locations.

Methods: This study included 498 HNC patients (male = 63%, age = 60+12.16 years). The majority of patients (54%) were diagnosed with advanced stage cancer and the most common cancer site was oral cavity (38%). Forty-two percent of patients lived in a rural location, as measured by RUCA codes from the US Department of Agriculture. Outcomes were collected at the time of diagnosis, and at 6-month and 1-year follow-ups, and included BDI depression symptoms, mental and physical functioning, and cancer-specific QOL domains of speech, eating, aesthetics, and social disruption. Repeated measures ANOVA's were used to examine the association between rurality and psychosocial outcomes over time, controlling for age, sex, cancer site, and stage.

Results: Tests of between-subjects effects on total depression scores did not differ significantly between groups across the three time points, $F(1, 248) = 3.34$, $p = .069$. Given the overlap in somatic symptoms measured by the BDI and those experienced by HNC patients (e.g., fatigue, weight loss, change in appetite), cognitive-items only of the BDI were also examined. Cognitive depression scores differed significantly between groups, $F(1,249) = 5.23$, $p = .023$, with urban patients reporting fewer symptoms at the 6-month follow-up ($\beta = -1.53$, $p = .01$). Regarding HNC-QOL, there was a significant difference in eating scores at 6-months ($F(1,236) = 3.94$, $p = .048$, $\beta = 6.62$, $p = .021$) as well as aesthetics at baseline ($F(1, 241) = 5.00$, $p = .026$, $\beta = 5.67$, $p = .026$). For both domains, urban patients reported better QOL than rural patients.

Conclusions: Results suggest HNC patients living in rural locations experience more cognitive depression symptoms than their urban counterparts 6-months following their cancer diagnosis. Rural patients were also more likely to report poorer QOL in regard to eating at 6-months and aesthetics at the time of diagnosis. These results underscore the need for depression screening, referral, and management in HNC patients living in rural settings.

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SUGAR-SWEETENED BEVERAGE CONSUMPTION AND METABOLIC SYNDROME RISK IN MEXICAN-AMERICANS LIVING ON THE TEXAS-MEXICO BORDER

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SELF-RATED HEALTH STATUS AND MULTIMORBIDITY IN OLDER PATIENTS WITH ATRIAL FIBRILLATION

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DEPRESSIVE SYMPTOMS FOLLOWING CARDIOTHORACIC SURGERY: ARE THERE DIFFERENCES BY SURGERY TYPE?

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Background: Up to 40% of patients will develop depression after cardiac surgery, and these post-operative depressive symptoms are associated with poorer cardiac outcomes. No studies have directly compared the prevalence and patterns of depressive symptoms between patients undergoing different cardiothoracic surgical procedures. The purpose of this study was to assess the association between valve surgery, coronary artery bypass graft (CABG) surgery, or their combination with patterns of depressive symptoms during the 12 months following surgery.

Methods: Patients who were undergoing cardiac surgery (valve repair/replacement surgery, coronary artery bypass graft (CABG) surgery, or CABG + valve surgery) in the Bluhm Cardiovascular Institute of Northwestern were enrolled in this study. Depressive symptoms were assessed using the Beck Depression Inventory (BDI-II) at baseline and post-operatively at 3 months, 6 months, and 12 months. Demographics and medical variables were obtained from the electronic health record. We assessed the sample's baseline characteristics by cardiac surgery type and evaluated the trends in depressive symptoms through follow-up by cardiac surgery type using repeated-measures Analysis of Covariance (ANCOVA), adjusted for sociodemographics and medical diagnoses.

Results: Of 264 cardiac surgery patients, 155 (59%) had valve surgery, 47 (18%) had CABG surgery, and 62 (23%) had CABG + valve surgery. The sample was predominantly male (63%), married/partnered (64%), had a college degree (52%), not currently working (64%), made < \$50,000/year (52%), and were 68 years old on average. At baseline, average depressive symptoms did not differ between valve surgery (M=7.8, SD=6.7), CABG surgery (M=9.0, SD=7.9) and CABG + valve surgery (M=9.4, SD=7.9), $p=.327$. In the full sample, depressive symptoms were highly correlated across all measurement times, with Pearson's correlation coefficients from 0.50 to 0.90, all $ps < .001$. In the fully adjusted model, the surgery x time interaction was not significant ($F=0.83$, $p=0.549$), suggesting that the patterns of post-operative depressive symptoms did not differ by cardiac surgery procedure. Likewise, the main effect of surgery type did not reach significance ($F=2.51$, $p=0.087$). However, there was a main effect of time ($F=2.78$, $p=0.042$), indicating that depressive symptoms decreased over time from baseline through 12 months.

Discussion: On average, depressive symptoms improved following cardiac surgery, with no significant difference by cardiothoracic surgical procedure. Future studies evaluating the ways in which cardiac surgeries contribute to depression are warranted to better understand the ways in which psychological comorbidities affect cardiac outcomes.

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ASSOCIATIONS BETWEEN RACE, WORKPLACE ORGANIZATIONAL FACTORS AND CARDIOVASCULAR DISEASE RISK FACTOR

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Background: As the number of individuals with CVD increases, the financial burden will continue to climb as cardiovascular disease (CVD) will cost Americans 1.1 trillion dollars by 2035.¹ For employers, these financial and personal burdens affect the entire workforce, but CVD and its associated risk factors are disproportionate for many racial groups. Research on racial disparities in CVD risk factors like hypertension or diabetes and socioeconomic status has not fully considered workplace organizational factors such as job demands and its association with health. The objective of this study is to evaluate whether associations between workplace organizational factors with hypertension and diabetes vary by race and income.

Methods: Data from the 2015 National Health Interview Survey included 25,318 African Americans and whites. Workplace organizational factors included survey questions referring to the ability to complete job tasks, support from supervisors, decision-making, job demands interfering with personal/family life, and job insecurity. Logistic regressions including multiplicative interaction terms were used to determine whether race and income moderated the associations of occupational factors with diabetes and hypertension.

Results: African Americans had higher odds of diabetes (OR=1.41, 95% CI=1.05–1.90) and hypertension (OR=1.85, 95% CI=1.57–2.18). The associations of workplace organizational factors with hypertension and diabetes differed by race, particularly among those with incomes >\$75,000. For whites, the odds of diabetes were higher among those with poor work-life balance (OR=1.42, 95% CI=1.02–1.97). However, among African Americans, poor work-life balance was associated with lower odds of diabetes (OR=0.39, 95% CI=0.18–0.83). Poor work-life balance was associated with lower odds of hypertension among African Americans (OR=0.47, 95% CI=0.25–0.87), but higher odds among whites (OR=1.35, 95% CI=1.08–1.70) among those with incomes >\$75,000.

Conclusion: This study demonstrates race differences in the associations of workplace organizational factors with hypertension and diabetes, and that higher income also moderated these associations. The presentation will explore recommendations for future studies and innovative digital resources such as CDC Workplace Health Resource Center for workforces to address the disparity.

American Heart Association. (2017). Cardiovascular Disease: A Costly Burden for America Projections through 2035. 1–14. Retrieved from <https://healthmetrics.heart.org/wp-content/uploads/2017/10/Cardiovascular-Disease-A-Costly-Burden.pdf>

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FITNESS IS ASSOCIATED WITH COGNITIVE FUNCTION IN SYSTOLIC HEART FAILURE

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Introduction: Almost 6 million Americans have heart failure (HF) and the prevalence is expected to rise in the next decade.¹ HF is associated with significant economic and personal burdens, such as high healthcare costs, high rates of readmission, reduced quality of life (QOL), and high risk of poor health, disability, and mortality.²⁻⁵ Cognitive impairment is highly prevalent in HF patients and is associated with poorer outcomes, such as poor self-management behaviors and greater risk of rehospitalization, compared to HF patients without cognitive impairment.⁶⁻¹¹ Previously, we found that fitness, assessed using the 2-minute step test (2MST),¹² was associated with global cognitive function and the domains of executive function, language, and attention (a trend at $p = .09$), but not memory.⁶ The aim of the current study was to replicate and extend these findings in an independent sample.

Methods: Participants were 120 patients with HF (60.8% male, 84.2% Caucasian). Average age was 68.17 years ($SD=9.91$). Functional fitness was measured using the 2MST.¹² Mean number of steps on the 2MST was 65.60 ($SD=26.35$). Cognitive function was assessed using the Modified Mini-Mental Status Examination (3MS)¹³ and a battery of neuropsychological tests. Composite scores were created for the domains of attention, executive function, and memory by calculating the average T-scores within each domain. Multiple linear hierarchical regression analyses were performed, controlling for important demographic and clinical variables.

Results: The 2MST was associated with global cognitive function ($F [5, 114] = 4.50$ [$p < .01$], $R^2 = .17$, $B = .08$ [$SE B = .02$], $p < .01$) and executive function ($F [5, 114] = 3.94$ [$p < .01$], $R^2 = .15$, $B = .08$ [$SE B = .03$], $p < .05$). The 2MST was also predictive of attention ($F [5, 114] = 5.59$ [$p < .001$], $R^2 = .20$, $B = .09$ [$SE B = 0.03$], $p < .01$) and memory ($F [5, 114] = 6.53$ [$p < .001$], $R^2 = .22$, $B = .06$ [$SE B = .03$], $p < .05$).

Discussion: Fitness was associated with global cognitive functioning, as well as the domains of executive function, attention, and memory. The lack of association between fitness and memory in our previous study⁶ may be explained by differences in sample characteristics. The 2MST is a practical alternative to the 6-minute walk test and may be clinically useful for identifying patients who would benefit from interventions to improve fitness toward the end of preserving cognition. For example, exercise-based cardiac rehabilitation has been shown to prevent cognitive decline and reduce risk of rehospitalization and mortality.¹⁵⁻¹⁷

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BEHAVIORAL AND STRESS CARDIAC ATTRIBUTIONS ARE RELATED TO IMPORTANCE OF CARDIAC REHABILITATION AND HEALTH SELF-DETERMINISM

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Prior research suggests that behavioral attributions for illness/chronic disease are positively associated with health behaviors, outcomes, and health-related attitudes and cognitions. This project tested whether there is an association between the type of attribution made by patients with cardiovascular disease (CVD), including behavioral ones, and attitudes toward cardiac rehabilitation (CR)—a secondary prevention program for patients with CVD. Participants were recruited from a safety-net hospital, resulting in a diverse sample of patients ($n = 167$) with CVD (mean age = 55.3 years; 66% male; 46% ethnic minority; 46% uninsured). Cardiac attribution was assessed with an open-ended item: “If you had to pick one major cause for your cardiac event, in your own words, what would that cause be?” Participants provided a total of 202 distinct attributions—134 produced one attribution, 34 produced two attributions, and two produced three attributions. Attributions were coded into three causal themes: biological ($n = 30$), behavioral ($n = 119$), and stress ($n = 24$). CR importance was assessed with a single item, “How important do you believe cardiac rehabilitation is to you?” which was scored from 1 (*Not at all important*) to 5 (*Very important*). Health related attitudes included health self-determinism and cardiac self-efficacy, which were measured by the Health Self-Determinism Index (HSDI) and Cardiac Self-efficacy Scale (CSE), respectively. CR attendance and the number of sessions completed were collected from participants' medical charts.

Results indicated that those who made behavioral attributions rated CR as more important [$t(164) = -2.833$, $p = .005$], but had lower HSDI scores [$t(158) = 2.275$, $p = .024$], than those who did not make a behavioral attribution. Findings for those who made stress attributions reflected the inverse pattern—they rated CR as less important [$t(164) = 2.12$, $p = .028$], but had higher HSDI scores [$t(164) = -2.052$, $p = .042$], than those who did not make stress attributions. Comparisons between attribution types were not significant regarding CSE, CR enrollment or attendance, and no significant associations were found for biological attributions.

These results suggest that health providers should be aware that the kinds of attributions patients make may relate to the importance they place on CR. Providers should incorporate conversations around patient produced attributions and explore related motivations to engage in suggested treatments.

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DOSE-RESPONSE EFFECTS OF AN ONLINE AND IN-PERSON FAMILY INTERVENTION ON PHYSICAL ACTIVITY IN CHILDREN WHO ARE OVERWEIGHT

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Background: Family-focused weight management interventions are the principal approach to manage childhood obesity. A blended Internet and in-person intervention can maximize the flexibility of delivering these interventions. However, there is a lack of studies examining the dose-response relationship between blended program engagement and improvements in physical activity (PA) behaviours among children.

Objectives: 1) Examine the engagement patterns of a blended 10-week family-based intervention; 2) explore the dose-response relationship between engagement and physical activity outcomes at 10-week follow-up.

Methods: This is a secondary data analysis from a randomized waitlist-controlled study examining the efficacy of a family-based early intervention program (EIP) for children with BMI \geq 85th percentile for age and sex. EIP was a 10-week blended intervention designed using the Multiple Process Action Control Framework. EIP consisted of 10 weekly in-person sessions and 10 online lessons. We analyzed the engagement pattern of participants in the EIP ($n=48$). In-person usage was defined as the number of classes attended. Online usage was defined as the percentage of content accessed and number of logins. Children's moderate-vigorous physical activity (MVPA) levels, screen time, and parent's support for the child to engage in PA were assessed using validated questionnaires. Descriptive analyses were used to analyze usage patterns and ANCOVA were used to evaluate the dose-response relationship.

Results: The mean (SD) in-person engagement was 6.36 (3.06) sessions, online usage was 21.65 \pm 22.71% of the content accessed and 2.86 \pm 3.26 times of logins over the 10 week period. Usage analysis revealed three distinct groups: i) high engagement (high online and in-person usage: \geq 60% of content; \geq 4 logins; \geq 70% of classes; $n=14$), ii) moderate engagement (high in-person but low online-engagement: attended \geq 70% of classes; $<$ 60% of content; $<$ 4 logins; $n=13$), and iii) low engagement (low online and in-person usage: $<$ 60% of content; $<$ 4 logins; attended $<$ 70% of classes; $n=22$) group. Relative to the low-engagement group, high engagement group showed significantly higher weekly MVPA (mean(SD): -1.4(0.48), $p=.007$) and lower screen-time (-1.2(0.38), $p=.004$) among children, and higher levels of parental PA support (0.5(0.26), $p=.047$) at 10-weeks. High engagement group also showed lower screen-time (-1.2(0.38), $p=.01$) among children and higher levels of parental PA support (0.66(0.28), $p=.02$) than the moderate engagement group at 10-weeks.

Conclusion: Our findings suggest a dose-response relationship between intervention engagement and improvements in PA outcomes at follow-up. Additional online portal engagement may further enhance the effectiveness of in-person interventions. Future research needs to examine optimal ways to combine online and in-person interventions.

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THE DYNAMICS OF ADOLESCENTS' PUBERTAL DEVELOPMENT, DEPRESSION AND FRIENDSHIP NETWORKS: STOCHASTIC ACTOR-ORIENTED MODEL

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Background: How friendship maintains and evolves significantly affects development and health outcomes for adolescents. Adolescents may select friends with a similar level of depression and dissolve friendship when their depression level becomes dissimilar. Pubertal development is also related to adolescent depression and social network, but the interaction between depression and pubertal development was rarely examined in the research of adolescent friendship network. In this study, we examined the changes of network structure over time in relation to depressive symptoms and pubertal development in adolescence.

Method: Data in this study are from the Taiwan Youth Project, a longitudinal study that started in 2000 and surveyed 2,844 students in the 7th grade from 40 junior high schools (Wave 1, age 13). Students were followed annually. Data from the first three waves were used. At waves 1–3, participants were asked to fill out a survey that included a social network assessment. Each student was asked to name three of their best friends in school. The analysis was conducted using stochastic actor-oriented models with the Simulation Investigation for Empirical Network Analysis program in R. We examined two sets of actor covariates: depression and pubertal development. The depressive symptom was measured through a short version of Symptom Checklist-90-Revised administered in each wave. Pubertal maturation was defined by using the Pubertal Development Scale.

Result: A total sample of 2,566 adolescents was used for this study (51.5% male). The Jaccard index among three waves were 0.27 and 0.32, indicating a relatively stable network structure. Adolescents with a higher level of depressive symptoms or early maturation named fewer friends, but not necessarily have less chance to be nominated as a friend. Adolescents with the same gender, or similar depressive level or pubertal development were more likely to be friends. The level of depression tends to be similar after two people become friends. Adolescents who received more nominations or nominated fewer friends over time have increased the level of depression.

Discussion: We observed homophily in the level of depression and pubertal development. It is important to not only target depressed individuals when developing interventions for depression but also to identify their close friends who are also depressed. Our study also highlighted the importance to intervene in possible mechanisms that worsen the depression level of this group.

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RECIPROCAL RELATIONSHIPS BETWEEN SELF-EFFICACY AND SOCIAL SUPPORT EXPLAIN PHYSICAL ACTIVITY IN ADULTS - A LONGITUDINAL STUDY

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Background: According to social cognitive theory self-efficacy beliefs and social support are the key determinants of health behavior change. They may operate twofold when explaining health outcomes with either self-efficacy acting as the establisher of the support (cultivation hypothesis) or social support enabling the formation of self-efficacy beliefs (enabling hypothesis). However, most of the studies testing the effect of self-efficacy and social support receipt on physical activity (PA) does not explain what comes first. Taking into account that much of the world is getting less active it is crucial to establish how these two factors operate when explaining physical activity (PA). Therefore, the two effects (cultivation and enabling hypotheses) were investigated in terms of PA among adults.

Methods: This study had a longitudinal design. Data were collected at three time-points: at baseline (T1), after 2 months (T2), and 6 months (T3) among adults from general population ($N = 299$ at T1; mean age = 44.43, $SD = 16.72$, 65% of women). Measures of self-efficacy beliefs towards PA, social support for PA, and moderate-to-vigorous physical activity (MVPA) were used. Mediation analyses with two sequential mediators were conducted.

Results: The enabling hypothesis was confirmed: participants who reported higher levels of social support for PA at T1 self-reported higher self-efficacy for PA at T2, and higher levels of MVPA at T2 and T3. The cultivation hypothesis was not supported.

Discussion: Among adults received support for PA may enable the formation of self-efficacy beliefs about one's competence to be physically active rather than self-efficacy beliefs cultivate the social support receipt. This study provides an insight into the order in which modifiable psycho-social variables operate when predicting MVPA among adults.

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IMPACT OF HURRICANE EVACUATION EXPERIENCES ON MOTHERS' HEALTH BEHAVIORS: MEDIATION BY POST-TRAUMATIC STRESS SYMPTOMS

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Introduction and Purpose: Families with children are vulnerable during and after hurricanes, but less is known about the impact of the pre-storm evacuation process. Mothers report significant stress during evacuations, particularly in making family decisions. However, research has not assessed the impact of evacuation stressors on maternal health. This study's primary objective was to understand the relationship between stressful evacuation experiences and mothers' health risk behaviors. Also, because posttraumatic stress symptoms (PTSS) have been implicated in the trauma-health association, we examined whether PTSS mediated these relationships.

Methods: After Hurricane Irma, South Florida mothers of children under 18 years ($N=520$) completed an online survey that evaluated stressful hurricane-related experiences before (i.e., evacuation-related), during, and after the storm. They also completed measures of PTSS and health risk behaviors, including substance use, sleep problems, and sedentary behavior. Structural equation modeling assessed direct relationships between evacuation stressors and loss/disruption after the storm and health risk behaviors as well as indirect relationships between all hurricane-related experiences (before, during, and after the storm) and health risk behaviors with PTSS as a mediator.

Results: Structural equation modeling results demonstrated good model fit ($\chi^2(3)=3.42$, $p=.33$; RMSEA=.02, 90% CI [.00-.08]; CFI=1.0; SRMR=.02). PTSS and loss/disruption after the hurricane were each directly associated with health risk behaviors. Further, greater evacuation stress was significantly associated with health risk behaviors through the mediating path of PTSS, even when controlling for stressful experiences during and after the storm. Evacuation stress was not directly associated with health risk behaviors.

Conclusions: Hurricanes are stressful for mothers caring for children. Stressful experiences that occur even before a hurricane may have a lasting impact on mothers' health behaviors via associations with PTSS. Findings underscore the need for better hurricane preparation efforts and for health behavior interventions post-hurricanes. Communities might prioritize efforts that reduce evacuation stress and support healthy behaviors after the storm (e.g., cleaning up parks to encourage physical activity). Mothers who experienced a recent hurricane or hurricane evacuation should be evaluated for health risk behaviors and stress reactions.

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EXECUTIVE FUNCTIONING OF SCHOOL-AGE CHILDREN WITH ASTHMA

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Background: Asthma is one of the most common chronic conditions of childhood, affecting nearly 10% of US children. The school-age years (7–11 years) are a critical time with respect to asthma management, as this is the age when children begin to assume asthma management responsibility alongside their parents. Unfortunately, more than half of school-age children with asthma are uncontrolled, resulting in increased asthma exacerbations, hospitalizations and missed school days. A critical gap is our understanding of a child's capacity to self-manage their asthma. To address this gap, the purpose of this study was to describe the executive functions that contribute to self-management capacity of school-age children with asthma.

Methods: Children ages 6 to 11 years enrolled in this cross-sectional study. Children used an iPad to complete the Childhood Asthma Control Test to assess asthma control and the NIH Cognitive Toolbox executive function battery that assessed learned knowledge (vocabulary, reading) and fluid abilities (attention, inhibition, working memory, cognitive flexibility and processing speed). Descriptive statistics were used to describe the sample demographics and asthma control. One-sample t-tests were used to compare study sample means for executive function subtests with the normed reference values. One-way ANOVAs were used to test group differences (age, gender) in cognitive subtest scores.

Results: Thirty-three children ($M = 8.3$ years + 1.5) enrolled in this pilot study. Fifty-three percent of the participants were male, and the majority were White (70%) and Non-Hispanic (74%). Fifty-three percent of the sample had uncontrolled asthma. Compared to the normative reference sample, children in this study had significantly lower scores in inhibition, $t(32) = -4.18$, $p < .001$, cognitive flexibility $t(32) = -3.35$, $p < .002$, and processing speed, $t(29) = -3.87$, $p < .001$. Interestingly, study participants had higher scores in vocabulary ($t(29) = 4.34$, $p < .001$) and reading ($t(32) = 3.77$, $p < .001$). There were no significant group differences in cognitive subtest scores when comparing by child age, gender, or asthma control.

DISCUSSION: Compared to a normative sample, children in this study demonstrated lower performance on several executive function fluid ability subtests (inhibition, cognitive flexibility, processing speed), all of which support a child's ability to self-manage. Impairments in executive functions that support self-management may represent an innovative area of inquiry to better understand a child's capacity for self-management. Furthermore, if these findings are longitudinally replicated, future interventions may be targeted toward building executive function skills as a novel strategy to increase the self-management capacity and overall health of children with asthma.

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DESIGN AND REFINEMENT OF A MHEALTH PARENT TRAINING SYSTEM TO ADDRESS BEHAVIORAL HEALTH CHALLENGING IN YOUNG CHILDREN

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This investigation describes the initial creation and refinement of the **Parenting Young Children Check-up (PYCC)**, a technology-based system for detecting and responding to disruptive behavior problems (DBPs) in young children. The program includes 4 parts. **First**, parents complete a screener for DBPs while at a pediatric primary care visit. **Second**, if the screener is positive, parents go through a brief intervention (BI) on a tablet. The BI provides parents with feedback on their child's behavior and promotes learning behavioral parenting skills. **Third**, parents receive tailored text messages based on their goals. **Fourth**, text messages contain links to video-based content on the PYCC website.

Development and evaluation of the PYCC is following the ORBIT model (Czajkowski et al., 2015); a NIH-recommended intervention development framework. Here we present the second step, **Define and Refine**, in which initial intervention materials are created and refined based on mixed methods feedback from key stakeholders. Beta versions of the BI and text messages were created through the Computerized Intervention Authoring System (CIAS). Next, we created parent training videos for the PYCC website.

Through an iterative process, we collected data from 17 physicians and 17 parents across 3 iterations. Participating parents were mothers of children ages 2–5 that reported DBP; mothers were predominately African American (94%). All participants viewed PYCC beta materials, completed a qualitative interview about the PYCC, and completed a feedback survey. Creation of the feedback survey was influenced by the Technology Acceptance Model (Davis, 1989) and included 17-items rated on a 5-point Likert scale (0 = strong disagree; 4 = strongly agree). There were 4–5 items to tap into participants' perceptions of each of the 4 parts of the PYCC. The goal was to achieve ratings ≥ 3 (i.e., "agreeing" that they have a positive perception of each part of the program). We computed a total score, which was the mean of all feedback survey ratings, to reflect ratings of the PYCC at each iteration. Finally, we coded qualitative interviews for positive comments, negative/critical comments, and suggestions for improvements.

At each iteration, positive comments were greater than negative/critical comments and suggestions for improvements. We made changes to the PYCC following each iteration; many of these changes were to the BI. At each of the 3 iterations, parents average ratings of the PYCC exceeded 3 (i.e., $M[SD] = 3.19[.22]$, $3.56[.41]$, and $3.28[.44]$, respectively). For physicians, overall ratings of the intervention increased across the 3 iterations (i.e., $M[SD] = 2.94[.16]$, $3.19[.33]$, and $3.60[.29]$, respectively). We will present examples of program content at each iteration, feedback survey results, and extracted quotes from interviews. Overall, we will present how mixed methods data guided intervention development.

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CLINICIAN AWARENESS OF PARENTING CONCERNS IN PATIENTS WITH CANCER

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Background: Oncology patients with dependent children endure the additional stress of communicating with and supporting their children through the cancer journey. Despite the well-recognized need to provide patient-centered comprehensive care, patients' concerns about parenting during treatment often go unaddressed.

Objective: Survey oncology clinicians about practices for addressing the parenting concerns of patients and awareness of locally available patient resources for parenting with cancer.

Methods: Stanford oncology clinicians were invited to complete a survey in Fall 2019. The survey assessed: 1) frequency clinicians discuss parenting concerns, 2) beliefs about the importance and confidence in addressing the topic of parenting with cancer, and 3) barriers. Bivariate analyses evaluated differences by clinician role and disease group specialty.

Results: Respondents (N=54) were mostly physicians (n=35; 65%) or Advance Practice Providers (APPs) (n=11; 20%) from a range of disease group specialties. Almost all clinicians (98%) believed patient-centered oncology care should address family issues/concerns and 80% reported asking patients whether they have children. Fewer (50%) regularly asked patients if they discussed their diagnosis with their children and only 16% regularly gave advice on how to have such discussions. About half (52%) felt comfortable discussing parenting concerns with patients, yet only 17% were confident their patients' parenting concerns were addressed. Common barriers to addressing parenting concerns included: time (41%), resources (35%), and expertise (35%). Twenty-nine clinicians (54%) were aware of a parent guidance program at Stanford and 50 (93%) stated they would (or already) refer patients for a parenting consultation. APPs were more likely than physicians to ask patients if they have concerns about the children's reaction to a parental cancer ($p < 0.01$) and if they have discussed the diagnosis and treatment with their children ($p = 0.05$). Physicians were more likely than APPs to give patients advice on how to discuss diagnosis with children ($p = 0.04$).

Conclusion: This survey showed that cancer clinicians endorse the importance of addressing patients' parenting concerns during cancer treatment but felt unprepared to handle such issues. A supportive care program dedicated to providing counseling services to patients with dependent children may fill a critical gap in care and better support patients in managing parenting concerns.

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"I JUST HOLD HER UNTIL MY ARM GETS NUMB": CAREGIVER BEHAVIORS ASSOCIATED WITH INFANT SLEEP SAFETY

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While caregivers often know of safety guidelines, they tend to be resistant to following recommendations for safe sleep. Many infants sleep in products and environments that are not appropriate and potentially deadly if misused, making it critical to take steps to improve caregivers' application of safety messaging and infant sleep practices. The current study sought to understand: What behaviors do caregivers engage in while putting an infant to sleep? What factors do caregivers consider while making purchase and use decisions for sleep products? What is caregivers' awareness of hazards and adherence to sleep safety messages and warning labels?

We conducted six, 90-minute focus groups with caregivers of children ages 2–11 months old. The discussion progressed in specificity: It began with questions that assessed general behaviors associated with infant sleeping, advanced into sleep messaging reactions, and concluded with questions about knowledge, attitudes, and awareness of infant sleep safety.

Participants often mentioned adding items to their infant's sleep environment to increase comfort, even though doing so goes against current safety messaging. Several competing factors—such as convenience, affordability, sleep product life cycles, advice from others, and product marketing—impact their purchasing decisions, their product use, and their safety message adherence. Participants emphasized that safety messaging tends to change from generation to generation so they do not know the most accurate message to follow. Participants also generally perceived warning labels as redundant, lengthy, and intended to protect the manufacturers from liability, which often leads them ignore labels altogether.

When caregivers disregard the hazards and risks associated with sleep products, they increase the risks of an infant-sleep related death. The purpose of the safety warnings is not clear to the target audience and the warnings are not being implemented effectively. If caregivers are not willing to read the warning labels on products, it is likely that they will miss critical safety information, particularly since they are often considering competing priorities when buying sleep products.

This research presents initial findings that can be further translated into actionable recommendations for safety messaging. It will be pertinent to investigate the most resonant messaging strategies, label revisions, and communication channels with audiences of interest to ensure that safety messaging is effectively reaching those who would benefit from it most. By reducing saturation of sleep safety messaging and taking a more targeted, nuanced approach, there is potential to reduce sleep-product related deaths in the future.

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SETTING MEANINGFUL GOALS IN REHABILITATION: A PRACTICAL TOOL

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Background: Goal setting is a key characteristic of modern rehabilitation. However, goals need to be meaningful and of importance to the client. We have developed a practical tool that facilitates the setting of meaningful rehabilitation goals.

Purpose: To describe a practical tool that facilitates the setting of meaningful rehabilitation goals.

Method: We reviewed literature supporting the importance of a hierarchy of goals: one or more overall goals which clients find personally meaningful; and specific goals that are related to the overall goals. We also reviewed literature suggesting that the client's global meaning (i.e., fundamental beliefs, goals and attitudes) need to be explored before setting any rehabilitation goal. These fundamental beliefs, goals and attitudes can serve as the point of departure for setting rehabilitation goals.

Results: We set out a three stage process to set goals: (i) exploring the client's global meaning (i.e., fundamental beliefs, goals and attitudes), (ii) deriving a meaningful overall rehabilitation goal from the client's global meaning, and (iii) setting specific rehabilitation goals that serve to achieve the meaningful overall rehabilitation goal.

Conclusion: This is an extension of current practice in many rehabilitation teams which may help counter the drive towards exclusively functional goals based around independence.

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AN EXERCISE IN DIVERSITY: THE TRANSTHEORETICAL MODEL APPLIED ACROSS CULTURES, POPULATIONS, AND NATIONS

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A major area of disagreement in sociopolitical debates is that over healthcare. US political parties differ greatly over which form of healthcare is best for the *population health*. While Republicans and Democrats propose (very different) plans that promote access to *healthcare* in the general population, neither party systematically maps out how they will promote access to *health* in the general population.

Recent reports indicate that one of the greatest predictors of health outcomes in the general population is health behavior (Mokdad, 2018; Li et al. 2018). With the majority of the US adult population having 2+ health risk behaviors (Berrigan et al, 2003); and the underserved populations suffering greater health consequences due to health risk behaviors (Berger, Lund, and Brawley 2007; Perez-Stable et al. 1998; USDHHS, 1996, 2000; CDC, 2009); one could posit that healthcare programs need models of health behavior change that can be applied across the general population.

The present paper will present and integrate empirical, cross-cultural findings on the Transtheoretical Model (TTM) from the last three decades to distill common principles of change that exist across diverse populations. Interventions that have been disseminated across countries, across and within different populations, and in different languages will be reviewed. Cross cultural principles of change will be distilled from important findings in experimental (e.g. Velicer, Redding, Sun, & Prochaska, 2007) and metanalytic (e.g. Hall & Rossi, 2004) research. The present paper will operationalize these underlying *principles of change* to propose that, *what unites human beings* (across cultures and across sociopolitical viewpoints) *is their ability to change*.

An "Exercise in Diversity" is one that creates an inclusive (population health) program that can meet the needs of, and simultaneously increase the strengths of, the general population. Through healthy behavior and (multiple) health behavior change, this can be done in population health. Through decades of research on the TTM, cross-cultural principles of change can and will be proposed.

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A MIXED METHODS FORMATIVE ANALYSIS OF ACCEPTABILITY AND BARRIERS TO MINDFULNESS IN AN UNDERSERVED MINDFULNESS NAÏVE POPULATION

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Background: Low-income smokers have elevated tobacco-related disease risk exacerbating health disparities. Further, low-income female smokers express elevated stress and negative affect, known barriers to smoking behavior change. Mindfulness practice shows potential to influence smoking behavior change either directly, or through its mitigating effects on stress, negative affect and urge reactivity. However, vulnerable groups are less likely to uptake or practice mindfulness activities. Formative research is needed to understand and address this disparity by systematically assessing mindfulness acceptability. Mindfulness interventions for underserved populations can then be adapted, with tailored elements to address elevated barriers to health behavior change.

Methods: Female smokers were recruited from Women, Infant and Children clinics to participate in one-hour phone interviews. Data collection methods enabled assessment of overall mindfulness knowledge, attitudes and subjective norms around content, language used, and pros/cons to different practices. Interviews were transcribed and NVivo software was used to code and explore themes.

Results: The sample ($N = 12$) all self-reported being mindfulness naïve, had less than a college degree, were mostly (75%) African American, with an average age of 31 years old, and on average smoked 7 cigarettes/day. Regarding acceptability, the participants expressed interest in mindfulness and its potential utility in their lives and for managing stress. On a 1–10 Likert Scale (unlikely/not useful to very likely/useful) participants rated using mindfulness daily $M = 8.77$, $SD = 1.47$; mindfulness for managing stress $M = 8.36$, $SD = 2.11$; and mindfulness for managing smoking urges $M = 5.59$, $SD = 2.87$. Interviews generated themes related to meditation uptake and practice, such as barriers (e.g., time, abstract terminology). Participants also expressed preference for more concrete descriptive language in meditation instructions, shorter duration of sessions, prompts for informal practices, examples or analogies and more encouragement around behavior change and adherence. These themes will be presented in greater detail.

Conclusion: This study provides a formative analysis of mindfulness acceptability and barriers in a high-risk underrepresented group of female smokers. The findings show a favorable attitude towards mindfulness, with specific preferences that could guide tailoring of content and delivery to boost uptake and practice.

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AWARENESS OF AND PREFERENCES FOR HEALTHCARE CHAPLAINCY SERVICES AMONG U.S. ADULTS

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Background: Inadequate support of religious/spiritual (R/S) needs in health care settings is associated with poor quality of life, higher rates of depressive symptoms, and higher costs at end-of-life. Little is known about the awareness of and preferences of U.S. adults for chaplaincy services to address their R/S needs in health care settings.

Methods: Data were collected from a nationally representative sample of U.S. adults through the Ipsos Government & Academic Omnibus survey panel ($n=1,020$). Participants were asked to respond to questions related to preferences for chaplain services that could be provided in inpatient and outpatient settings, their previous experience and awareness of chaplains, and the level of importance that respondents place on having their religious, spiritual, and/or sources of meaning addressed.

Results: Mean age of the sample was 47.6. The majority of the sample were aware of chaplains (85%) but only 15% indicated that they had previous experience with a chaplain. Compared to the population that are aware of what chaplain is, adults who were unaware of chaplains were younger (38 versus 49 years, $p < 0.0001$), and a greater proportion female ($p=0.005$), racial/ethnic minorities ($p < 0.0001$), and lower educational attainment ($p=0.004$). Seventy percent indicated interest in having religious, spiritual, or existential needs met in the context of healthcare. The least desired services in both the inpatient and outpatient setting related directly to religious and/or spiritual needs or resources, whereas more participants indicated desire to receiving support to explore what is most important in the event of a life threatening illness or injury and values related to treatment decisions.

Conclusion: The majority of the U.S. population say they are aware chaplains, and desire the services they offer, yet few report previous experience with them in health care settings. More behavioral interventions are needed to better connect patients to chaplains.

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COGNITIVE FUSION AND FATIGUE IN COLLEGE STUDENTS

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College students report high levels of fatigue and decreased energy. Fatigue in college students is associated with poor academic performance and reduced well-being. While sleep deprivation is often thought to be the culprit, research has suggested that even after controlling for sleep, there are still high rates of fatigue in this group. Understanding the factors that contribute to energy levels and fatigue among college students can help prevent burn-out, exhaustion and enhance well-being in this population. High stress, low levels of social support and poor sleep have often been associated with negative emotional states in college students. More recent work has pointed to the role that trait mindfulness may play in health and well-being. A factor that has received less attention is cognitive fusion, or how entangled one is with their thoughts. The purpose of this study was to explore how factors associated with emotional health in college students would predict fatigue and energy levels in this group. Participants (N=353) were students enrolled in introductory psychology courses at a small private college in the Northeast. The participants ranged in age from 17–22 years (M=18.82, SD=0.89). The majority of the sample was female (72%). After informed consent was obtained, participants completed the following questionnaires: The Cognitive Fusion Scale (CFQ), the SF-36 (energy levels component), Perceived Stress Scale (PSS-14), Luben Social Network Scale-Revised (LSNS), Five Facet Mindfulness Questionnaire (FFMQ), and a demographic questionnaire which included an assessment of sleep. Hierarchical multiple regression analyses controlling for stress, social support, mindfulness, sleep and sex, demonstrated a significant effect of cognitive fusion on fatigue/energy ($R^2=.39$, $F(1, 353) = 22.96$, $p < 0.01$). Cognitive fusion emerged as the only predictor of energy/fatigue. Higher levels of cognitive fusion was associated with lower levels of energy ($B = -.16$, $p < 0.05$). The findings suggest that the how fused someone is with their thoughts may play a role in levels of fatigue. Cognitive defusion techniques may be beneficial to use in colleges to help students enhance energy and well-being.

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IMPROVING CANCER PATIENTS' INSURANCE CHOICES (I CAN PIC): A RANDOMIZED TRIAL OF A PERSONALIZED HEALTH INSURANCE DECISION AID

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Purpose: Many cancer survivors struggle to choose a health insurance plan that meets their needs due to high costs, limited health insurance literacy, and lack of decision support. We developed a web-based health insurance decision aid, Improving Cancer Patients' Insurance Choices (I Can PIC) to provide plain language education, personalized cost estimates of annual healthcare expenses, and a resource list.

Methods: We used a mixed-methods approach to develop I Can PIC. I Can PIC's personalized cost calculator was based on data from the Medical Expenditure Panel Survey and regional averages of insurance costs by plan type. Eligible individuals (18–64 years old, diagnosed with cancer ≤ 5 years, English-speaking, resident of one of two states where we could provide cost estimates, not eligible for Medicaid or Medicare) were randomized to I Can PIC or an attention control group (American Cancer Society health insurance worksheet). Primary outcomes included health insurance knowledge, decisional conflict, and decision self-efficacy after completing I Can PIC or the control. Secondary outcomes included knowledge, decisional conflict, decision self-efficacy, financial toxicity, and delay of healthcare due to cost at a 3–6 month follow-up.

Results: 284/335 eligible participants (79%) consented and were randomized; 206 (73%) completed the initial survey (106 in I Can PIC; 100 in the control); 180 (87%) completed a 3–6 month follow-up. Most were Non-Hispanic White (80.1%); about half had a college degree (54.9%). Their mean age was 53. At the first time point, health insurance knowledge (mean=89.3% vs. 74.4%; $p < 0.0001$) and confidence understanding health insurance (53.8% vs. 32.3% very confident, $p < 0.008$) were higher in the I Can PIC vs. control group. At the 3–6 month follow-up, the I Can PIC group retained higher health insurance knowledge (mean=82.1% v. 74.9%; $p < 0.002$); confidence was not re-assessed. There were no significant differences between the I Can PIC and control group in decisional conflict, decision self-efficacy, financial toxicity or delay of care due to costs. Both groups reported having limited health insurance options from which to choose. Results did not change when controlling for health literacy and employment.

Conclusions: I Can PIC increased cancer patients' and survivors' health insurance knowledge and confidence using health insurance. System-level interventions may be needed to lower financial toxicity and help patients manage care costs.

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NEGATIVE AFFECT TO BREAST CANCER AND CHOICES OF CONTRALATERAL PROPHYLACTIC MASTECTOMY

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Objective: Contralateral Prophylactic Mastectomy (CPM) is an operation to remove the non-affected breast in patients with breast cancer or ductal carcinoma in situ. CPM rates have increased considerably, particularly in patients for whom CPM confers no survival benefit. Negative affect to cancer is thought to contribute.

We explored affect's multiple influences on CPM perceptions and behaviors. In particular, affect can inform risk perceptions (Loewenstein et al., 2001; Slovic et al., 2004) and directly motivate behaviors (Peters, Lipkus, & Diefenbach, 2006). As a direct motivator, affect also may produce motivated reasoning (i.e., people are driven to perceive the world in ways consistent with their goals; Kunda, 1990). Specifically, we expected women with more negative affect to breast cancer to be motivated to feel more positively about treatments they perceived (incorrectly) to reduce cancer risk and to choose those treatments.

We hypothesized that an intervention that increased negative affect to breast cancer would increase positive affect toward and choices of CPM.

Methods: In a hypothetical study conducted over the Internet, healthy women (N=1,030) aged 30–59 years with no prior history of or genetic predisposition to breast cancer were asked to imagine they were diagnosed with early-stage breast cancer. They read one of three randomly selected survivor narratives designed to alter affect to breast cancer (very negative, negative, less negative). Afterward, participants provided their emotional responses to breast cancer and treatment choices (CPM, lumpectomy, or single mastectomy) and their affect to CPM and perceived future breast cancer risk.

Results: As hypothesized, we found that the negative (v. less negative) narrative caused participants to have more negative affect to breast cancer ($b=0.18$, $SE=0.06$, $p < .01$), less negative affect to CPM ($b=-0.18$, $SE=0.07$, $p=.01$), and to choose CPM more, $X^2=7.23$, $p=.03$. Women who felt more negative affect to breast cancer believed CPM had more benefits; this effect was mediated by affect to CPM, $b=-0.06$, $CI=[-0.12, -0.01]$. The very negative condition did not differ substantially from the negative condition.

Conclusions: Perceived affect and motivated reasoning appear to influence patients' decisions to undergo CPM to treat early-stage breast cancer among women for whom CPM provides no survival benefit. Important implications exist for how surgeons communicate with patients including empathic communication.

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DEBUNKING MISCONCEPTIONS ACROSS HEALTH DOMAINS: AN EXPERIMENTAL EVALUATION OF CORRECTIVE INFORMATION

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Introduction: The endorsement of misconceptions, unlike ignorance, may be deep-rooted and can be challenging to correct. These erroneous beliefs are prevalent in a variety of areas, including several health domains (e.g., vaccinations, complementary and alternative medicine, diet and exercise, and mental health). Not surprisingly, such misconceptions may lead to harmful consequences, such as increased spread of preventable illnesses or emergency room visits due to supplement misuse. Public health campaign-style posters actively refuting myths have been used in an attempt to not only reduce endorsement of such misconceptions but also influence behavioral intentions. Unfortunately, efforts to reduce misconceptions may, in some circumstances, result in backfire effects, whereby incorrect information is misremembered as fact.

Methods: The current study's aim was to examine the effects of myth debunking posters formatted based upon an actual Centers for Disease Control and Prevention flu vaccination campaign applied to multiple health-related domains. Using a factorial design, participants ($n = 208$, undergraduate psychology students) were randomly assigned to one of six myth debunking conditions: 2 (immediate vs. 30 minute delayed response to facts/myths) \times 3 (facts-only vs. myths-and-facts vs. control). That is, participants were exposed to posters that included either both myths and facts within each of the mentioned health domains ($n = 67$), only facts ($n = 74$), or control posters that included misconceptions about the university's majors and advising ($n = 67$). Participants were then given a test of the health domain myths presented on the posters and were asked about intentions related to each domain.

Results: No significant (all $ps > .05$) main effects for time (immediate vs. delayed) or interactions (condition \times time) across the four content areas were detected. Those in the myths-and-facts as well as the facts-only condition, overall, identified more correct information than the control condition within the domains of vaccinations ($p < .001$, $d = 0.99$ and 1.28 respectively), mental health ($p < .001$, $d = 1.06$ and 0.93 respectively), complementary and alternative medicine ($p < .001$, $d = 0.89$ and 1.01 respectively), and diet and exercise ($p < .001$, $d = 1.36$ and 1.01 respectively). However, intentions within these domains did not differ significantly. Furthermore, performance on the myth test and intentions did not differ between the facts-only and myths-and-facts conditions.

Discussion: The results suggest that refutational style posters, both in a myths-and-facts and a facts-only format, are effective at correcting misconceptions across a variety of health domains with a low risk of backfire effects. Further efforts are needed to demonstrate an impact on intentions and behaviors of targeted consumers of this style of messaging.

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AFFECT REGULATION AND HEALTH BEHAVIOR CHANGE: THE CALIBRATE AND QUALIFY MODEL

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Studies to predict and understand health behaviors and work on emotion regulation appear to occupy different research silos with little in the way of crosstalk. Here, we introduce the Calibrate and Qualify Model to begin to integrate research on affect regulation and regulation of health behaviors. The model proposes that affect regulation capabilities and strategies (ARCS) could influence health behaviors in two ways. First, ARCS could influence the favorability of health-related attitudes, norms, and self-efficacy and thereby promote intentions and behavior (the Calibrate route). Second, ARCS could influence the strength of association between, e.g., affective attitudes and intention or between intentions and health behaviors, and thereby promote behavior change (the Qualify route). We undertook two observational studies of multiple health behaviors to test these predictions. Study 1 ($N = 318$) tested the model in relation to 12 health-related behavioral intentions. Study 2 ($N = 1,294$) was a longitudinal study of 6 health behaviors. Affect regulation capability was operationalized by the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) in Study 1 and by the Emotion Control Scale (Niven et al., 2013) in Study 2. Affect regulation strategies were indexed by the Emotion Regulation Questionnaire (Gross & John, 2003) in both studies. Multi-level modelling of Study 1 data offered evidence to support the Calibrate route: ARCS predicted health-related intentions and this relationship was mediated by behavior-specific cognitions. There was modest evidence that ARCS influenced the strength of relations between cognitions and intentions. Study 2 corroborated these findings for the prediction of intentions and obtained evidence that the ARCS-health behavior relation was mediated by cognitions. ARCS also qualified the consistency between intentions and health behaviors. Greater affect regulation capability and greater use of cognitive appraisal both were associated with improved translation of intentions into health behaviors. The present findings offer new evidence that research on affect regulation can enhance the prediction and understanding of health behaviors. Although experimental tests are needed to corroborate these observational findings, the Calibrate and Qualify Model may offer a useful starting point for future research concerned with integrating the self-regulation of affect and health behaviors.

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SELF-EFFICACY AND PHYSICAL ACTIVITY IN THE I-D-HEALTH STUDY: A RANDOMIZED CONTROLLED TRIAL

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Introduction: The I-D-HEALTH Study was a randomized encouragement trial evaluating the effectiveness of offering primary care patients with type 2 diabetes access to a community adaptation of the Look AHEAD lifestyle intervention, which was designed to support healthy eating, physical activity, and modest weight loss. Though the intervention resulted in modest weight loss, the behavioral mechanisms underlying this effect have not been studied.

Hypotheses: Based on past research linking self-efficacy with physical activity behavior, we hypothesized that higher levels of participation in the I-D-HEALTH intervention would result in increased exercise self-efficacy, which in turn would be associated with higher physical activity.

Methods: I-D-HEALTH randomized individual study participants to receive brief advice for modest weight loss or encouragement to attend a group lifestyle intervention program offered at a nearby community location. At 0, 6, 12, and 24 months, study participants attended study visits where they were weighed and completed questionnaires, which included the PACE self-efficacy scale and the Paffenbarger self-report physical activity instrument, which estimates mean kilocalories per week of energy expenditure. We studied associations between levels of intervention attendance and self-efficacy, as well as whether increases in self-efficacy were predictive of increased energy expenditure.

Results: Our analysis found a dose-response relationship in which each additional lifestyle intervention session attended was associated with a mean increase in energy expenditure of 29.2 kilocalories per week at 12 months ($p = 0.016$) and 13.6 kilocalories per week at 24 months ($p = 0.046$), from a baseline median of 496 kilocalories per week. Self-efficacy did not change as a result of the study, but at 12 months it was associated with an increased expenditure of 256 kilocalories per week ($p = 0.0090$) and at 24 months it was associated with an increased expenditure of 451 kilocalories per week ($p < 0.0001$), after controlling for baseline physical activity and the number of intervention sessions attended at those timepoints.

Conclusions: Intervention attendance was associated with modest increases in self-reported physical activity, but not exercise self-efficacy. Exercise self-efficacy was an important predictor of how much participants would increase their physical activity. Given that this “pragmatic,” community-based lifestyle intervention achieved relatively lower levels of physical activity and weight loss than has been observed in prior efficacy studies, further research should explore if it is possible to enhance its effectiveness using additional strategies designed to increase exercise self-efficacy.

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A MIXED METHODS INVESTIGATION OF THE BARRIERS AND FACILITATORS TO MEDICATION ADHERENCE IN PATIENTS WITH TYPE 2 DIABETES

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Background: Type 2 diabetes (T2D) incurs tremendous health cost associated with various complications due to poor diabetes control. Medication adherence, which is correlated with patients' health literacy, should be consistently practiced to achieve optimal diabetes control. A deeper understanding of the specific communication and psychosocial factors related to medication-taking behaviors across different levels of health literacy among people with T2D will guide the development of effective interventions and strategies to enhance medication adherence.

Objectives: (1) To examine whether the barriers and facilitators associated with medication adherence differ among people with T2D across different levels of health literacy. (2) To explore patients' perceptions of the barriers and facilitators of medication adherence across different levels of health literacy. (3) To understand how the qualitative interview data complement the quantitative survey results about the barriers and facilitators of medication adherence.

Methods: This mixed-methods study used an explanatory sequential design, including a quantitative study with a survey questionnaire followed by a qualitative study with semi-structured interviews. The Health Literacy Pathway Model was used to identify the psychosocial and communication factors that may influence medication adherence. Participants enrolled were at least 20 years old, diagnosed with T2D, understood English, and prescribed at least one oral diabetes medicine daily. Analysis of covariance and direct content analysis were used respectively in quantitative and qualitative analysis. A joint display was used to present the integrated findings from quantitative and qualitative data.

Results: In the quantitative phase, 205 participants provided complete information in the survey questionnaire. In the qualitative phase, 23 participants completed semi-structured interviews. Confirmed by quantitative and qualitative data, holding stronger self-efficacy, having fewer concern beliefs about medication, and possessing fewer perceived barriers to medication-taking are necessary for better medication adherence. Linking medication-taking to daily routine and focusing on the internal locus of control is an imperative approach to foster self-efficacy of medication use. Addressing patients' life experience and clarifying medication misinformation may help participants cope with their concerns with medications. Solving the high cost of medications and therapy-related problems could lessen participants' perception of barriers to medication-taking.

Conclusion: To optimally support patients' diabetes care, practitioners should address concern beliefs among non-adherent patients with low health literacy, as well as emphasize self-efficacy and perceived barriers to medication adherence among all non-adherent patients with T2D.

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THE BENEFITS OF DAILY EXERCISE ON BLOOD GLUCOSE LEVELS AND EMOTIONAL WELLBEING AMONG ADULTS WITH TYPE 1 DIABETES

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Daily exercise is an important self-care behavior among persons with type 1 diabetes (T1D). Exercise is also related to immediate and long-term effects on emotional wellbeing, but is complicated by hypoglycemia. Previous studies of exercise in the context of T1D were mostly experimental or intervention designs and focused less on effects of naturally occurring episodes of daily exercise on diabetes outcomes and emotional wellbeing. The current study examined concurrent (same day-association) and lagged (following-day associations while controlling for previous day's dependent variable) effects of daily exercise on daily BG levels and emotional wellbeing (affect).

199 adults with T1D ($M_{age} = 46.82$) completed a 14-day diary in which they reported their engagement in moderate to vigorous exercise for 30 minutes and positive and negative affect. Daily blood glucose (BG) values were gathered through study-provided glucometers. We used BG mean, risk for high BG, and risk for low BG to measure BG levels. The present study utilized multilevel models and controlled for other self-care behaviors, comorbidity, gender, BMI, insulin status, CGM, age, gender, and length of diagnosis.

On average, participants exercised moderately to vigorously for 30 minutes on 5.84 of the 14 diary days (i.e., 2.92 days a week).

Concurrent analyses showed that on days when persons with T1D reported they exercised moderately to vigorously for 30 minutes they had lower mean BG levels, lower risk for high BG, lower negative affect, and higher positive affect on the same day. Lagged analyses showed that when persons with T1D reported they exercised moderately to vigorously for 30 minutes, they had lower mean BG levels, lower risk for high BG, and higher positive affect on the following day.

The results indicate that engaging in daily moderate to vigorous exercise for 30 minutes a day is important in maintaining daily blood glucose values and emotional wellbeing. Engaging in daily moderate to vigorous exercise for 30 minutes was not associated with a risk of low BG, which counters fears about hypoglycemia in persons with T1D. When giving recommendations for exercise, clinicians may want to assess persons with T1D for fears related to hypoglycemia, glycemic levels, and exercise management knowledge and provide education accordingly (e.g., insulin dose adjustments, hypoglycemia treatment).

A strength of this study is the conservative estimate of effects of daily exercise by controlling for other self-care behaviors and demographic and illness characteristics in a large sample. Furthermore, the effects of daily exercise persisted into the next day. A limitation is that this study relied solely on a single-item self-report measure of exercise. Future research should use more detailed assessments of frequency, intensity, and type of daily exercise and would benefit from objective measures of exercise such as actigraphy.

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ACCEPTABILITY OF SHARING BEHAVIORAL RISK AND GLUCOSE DATA BETWEEN PATIENTS AND CLINICIANS: A PILOT STUDY

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Background: Medically complex patients with uncontrolled type 2 diabetes face diabetes self-management challenges, including managing blood glucose levels and lifestyle behaviors. Technology packages have improved clinical outcomes by allowing patients to share data with clinic teams on home glucose (Glooko®) and behavioral health risk data (My Own Health Report, MOHR). However, adoption remains low in primary care. In a pilot study to inform implementation efforts, we evaluated the acceptability of Glooko/MOHR among key stakeholders: patients and clinicians.

Methods: We recruited eligible patients with uncontrolled type 2 diabetes mellitus (Hemoglobin A1c >8%) and their treating clinicians from two academic primary care clinics. Participants provided acceptability ratings after a demonstration of the process of sharing Glooko/MOHR data between patients and clinics. We considered ratings of ≥70% in each of the 7 Technology Acceptance Model (TAM) domains as acceptable. All quantitative data are reported as mean ± SD.

Results: Patients enrolled (n=6) were adults (age = 61.8 ± 13.3 years), 50% non-white, and 83% female. Clinicians (n=10) had 12.6 ± 9.9 years of practice experience.

Patient acceptability: The highest rated TAM domains for Glooko were Intention to use (92 ± 12) and Openness to Change (85 ± 21); for MOHR, the highest rated were Intention to use (83 ± 0) and Perceived usefulness (79 ± 8). Unacceptably rated TAM domains were Perceived ease of use (67 ± 0) and self-efficacy (58 ± 12) for Glooko, and Perceived ease of use (67 ± 0) for MOHR.

Clinician acceptability of sharing Glooko and MOHR data: Highest ratings were for Perceived usefulness (89.9 ± 0.4%) and Intention to use (83.3 ± 11.5%). Only Subjective Norms/Others' support was unacceptably rated (53.0 ± 14.3%); this related to low perceived support among patients (30%), colleagues (60%), and health managers (60%).

Discussion: Medically complex patients with diabetes and their clinicians generally found it useful to share glucose and behavioral risk data with each other. However, many patients anticipated it would be challenging to upload these data. Clinicians thought there would be limited support for this practice from patients, colleagues, and managers. To reach the promise of using remote technology and patient-reported data to address health challenges, clinics will need to address areas of high demand to patients/clinic leaders and provide sufficient technical assistance to patients.

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PREDICTOR OF SUBJECTIVE COGNITIVE DECLINE AMONG PEOPLE WITH DIABETES: SECONDARY ANALYSIS OF BRFSS DATA

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Purpose: People with diabetes are at nearly double the risk of developing cognitive impairment or dementia that will worsen patients' ability for self-management. Subjective cognitive decline (SCD), the self-reported experience of worsening or more frequent confusion or memory loss within the previous 12 months, is one of the earliest symptoms of dementia. The aim of the study was to explore factors that predict SCD in patients with diabetes.

Methods: This study is a secondary analysis of data obtained from the 2017 Behavioral Risk Factor Surveillance System (BRFSS), a random and cross-sectional survey of adults from 10 states. In addition to descriptive and Chi-square analyses, logistic regression was conducted for SCD with the following sets of predictors: 1) background (race, gender, education, and age), 2) health-related factors (self-rated health, BMI, and comorbidities), and 3) health behavior (smoking, exercise, drinking) were entered simultaneously.

Result: The sample is composed of 5263 participants with diabetes who had completed the 2017 BRFSS. More than one-third were aged 65 to 74 years, about 45% were male, and 53.4% were non-Hispanic Whites; 15% of participants reported having SCD. Increased odds of reporting SCD were observed among individuals who were Hispanic (OR = 2.21, $p < 0.001$), male (OR = 1.47, $p < 0.01$), had depression (OR = 3.84, $p < 0.001$), and arthritis (OR = 1.43, $p < 0.03$). Participants who perceived their overall health was good were less likely to have SCD (OR = 0.51, $p < 0.001$).

Conclusions: Hispanic adults, males, depression, and arthritis were more likely to report SCD. Healthcare providers should target patients with these characteristics for further evaluation of cognitive dysfunction or early intervention.

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STRATEGIES TO INCREASE HEALTH SYSTEM REFERRALS TO CHRONIC DISEASE PREVENTION AND MANAGEMENT PROGRAMS: A SYSTEMATIC REVIEW

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Evidence-based prevention and management programs such as the National Diabetes Prevention Program lifestyle change program or Diabetes Self-Management Education and Support are effective in preventing or managing chronic diseases. Referrals from a health care provider offer an opportunity to increase participation in these programs, as patients are more likely to act on their advice. The goal of this systematic review was to examine the effectiveness of strategies to increase referrals to various chronic disease prevention and management programs.

We conducted a systematic search (database inception - May 2019) to identify qualifying studies. We included studies that evaluated any strategy designed to increase health care provider referrals to evidence-based chronic disease prevention and management programs, and reported any measure of referral rates. We excluded studies that assessed referrals to specialist or diagnostic care and non-comparative study designs. Using methods developed by The Community Guide, two reviewers independently abstracted relevant information and assessed study quality. Because of the heterogeneity of the various referral strategies, we summarized results narratively.

We identified 55 studies that met our inclusion criteria. Physicians were the most common referring providers (31 studies; 56.4%) and most referrals were made in a primary care setting (40 studies; 72.7%). The majority of studies reported a statistically significant improvement in referrals (34 studies, 61.8%). The following individual strategies were effective in increasing referrals: providing formal training or professional development to referring providers; providing educational materials; delivering feedback on referral rates; and using a team-based care approach. Additionally, providing formal training in combination with clinical decision support was also effective in increasing referrals.

These findings demonstrate that health care provider referral rates to chronic disease prevention and management programs can be increased through many strategies. These findings also suggest that multiple strategies used in combination may be even more successful. Finding the right balance of strategies so as not to overwhelm referring health care providers should be considered.

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DIABETES-RELATED QUALITY OF LIFE: LEARNING FROM PATIENTS MAKING LIFESTYLE CHANGES TO IMPROVE TYPE 2 DIABETES SELF-MANAGEMENT

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Background: Type 2 Diabetes (T2D) has a significant impact on quality of life (QoL). Patients and healthcare providers agree that QoL is an important patient-reported outcome that should inform diabetes care. However, there is substantial disagreement on how best to define and measure QoL in diabetes. Making lifestyle changes associated with T2D self management may enhance or detract from QoL. The aim of this study was to use qualitative methods to explore factors which influence QoL among predominantly low-income Latino and Black adults with T2D and elevated A1Cs after participation in a diabetes self-management intervention.

Methods: Adults treated for T2D in New York City primary care practices were recruited based on having an HbA1c $\geq 7.5\%$. Trial participants (N=812) were randomly assigned to a control condition with mailed print materials for diabetes education or to a telephonic intervention including 6–12 phone calls over 1 year from a diabetes health educator using an intervention manual and participant workbook. Sub-study participants (N=50; 72% Hispanic, 20% Non-Hispanic Black, 4% Non-Hispanic White; 62% Spanish speaking) from both conditions were interviewed by phone after study completion, asked to define QoL in their own words, and to share ways that T2D, treatment, management, and study participation impacted QoL. Interviews were audio-recorded, translated, transcribed and analyzed using thematic analysis by a coding team.

Results: Participants reported factors related to T2D that can impact QoL negatively and positively. Themes were consistent in both control and intervention groups. Participants cited the following negative factors: financial strain; symptom progression and burden; difficulty modifying cultural and lifestyle habits. Positive factors included: social support from family, friends and health-care providers; diabetes education; positive health behavior change.

Conclusion: Results indicate that adults aiming to improve T2D self-management have a multifaceted definition of QoL that includes physical health, independence, social support and engaging in cultural and lifestyle routines. These findings revealed aspects of QoL not currently reflected in available T2D-related QoL measures: socio-cultural impact and social support for diabetes self-care. Results will inform the development of a patient-centered measure of T2D-related QoL.

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CASE STUDY: USING EDUCATION TO ADDRESS PATIENT CONCERNS REGARDING WEIGHT PLATEAUS AT A VIRTUAL DIABETES CLINIC

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Background: Virta Health provides a virtual medical intervention including nutritional ketosis to improve glycemic outcomes among people with type 2 diabetes and prediabetes. Most patients are overweight and experience significant weight loss, and while weight is not a primary intervention target, it is important to patients. When weight loss slows or stops, many patients become concerned and frustrated. Additionally, their confidence in their ability to adequately follow the intervention declines. To promote confidence, as a quality improvement initiative, we developed and assessed an educational module to: (1) help patients better understand weight loss and fluctuations, (2) set realistic expectations, and (3) provide practical tips to identify why their weight has stabilized and if appropriate, what they can do to overcome it.

Methods: Health coaches assigned the educational module to some of their patients. Patients assigned the module were in treatment at least 90 days (M=237 days) and wanted to lose weight. They completed the module at their own pace (M=5 days). At the time of this analysis, 37 patients completed the module at least 1 month prior and 22 completed it at least 2 months prior. We explored changes in their weight over time using paired t-tests. Specifically, we compared patients' average weight over 1 month prior to beginning the module with their average weight over 1 and 2 months post-module. After completing the module, we also asked patients to rate their confidence in their ability to work through "weight plateaus" in the future on a scale from 1 to 5.

Results: Patients' average weight decreased from 1 month pre- to 1 month post-module (-3.2lbs from 226lbs, $p < 0.0001$) and 1 month pre- to 2 months post-module (-3.7lbs from 227lbs, $p < 0.01$). The 78% of participants who completed the post-survey reported high confidence (M=4.2) in their ability to work through future weight plateaus.

Conclusions: After completing a new educational module, patients lost weight and reported high confidence for handling future weight plateaus. Ongoing evaluations will assess the module's impact on a larger sample of patients and over a longer period of time. Future efforts will also focus on identifying the optimal time to introduce this educational content to individual patients (e.g., before vs. after weight loss slows) to prevent frustration and maintain confidence in their ability to follow the intervention.

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CLIENT PREFERENCES AND DIABETES MANAGEMENT GUIDELINES INFORM THE DESIGN AND ELEMENTS OF A THERAPEUTIC FOOD BOX INTERVENTION

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Background: Type 2 diabetes (T2D) affects >30 million U.S. adults and disproportionately burdens food insecure households. Associations between food insecurity, poor diet quality, and T2D are well established and have prompted medical nutrition therapy (MNT) recommendations designed to prevent complications. Limited food access and low diet quality in food insecure households make these goals difficult to achieve. Food bank assistance often lacks cultural responsiveness and alignment with MNT goals. Incorporating MNT recommendations and food bank client preferences with food assistance efforts will help improve diet quality and mitigate T2D burden among food insecure households.

Purpose: To assess food bank clients' preferences related to a typical food assistance box and determine if alternative foods or resources would help clients with T2D improve diet quality and disease management.

Methods: Twenty participants self-reporting T2D or T2D in their household were recruited from the Community Food Bank of Southern Arizona in June/July 2019. Participants completed a demographic questionnaire and semi-structured interview. Participants viewed a food assistance package of 7 items (e.g., canned/dried legumes, vegetables, grains). Participants described food use and foods they would replace/add from 6 T2D-suitable items. Interviews, conducted in English (n=10) and Spanish (n=10), were digitally recorded, transcribed, and independently verified by two researchers. A script-based codebook was developed and confirmed by a third, senior researcher. All coding was conducted in NVIVO 12 using thematic analysis.

Results: Participants were 45 to 83 years, majority female (n=15, 75%), Hispanic (n=16, 80%), and food insecure (n=18, 90%). Participants used all foods received from the food bank or redistributed undesired items to friends and family members. Emerging themes from ongoing analysis center around existing food use and desired replacement foods. Food assistance use was driven by cultural relevance, household food preferences, and ability to pair foods with other household foods. Desired foods included fresh fruits and vegetables, meat, oats, oil, and herbs; desired resources included recipes, cooking demonstrations, and online support groups.

Conclusion: Participants desired culturally relevant, cost-effective, and healthy foods and recipes in accordance with MNT guidelines. This feedback can inform tailored food assistance supporting diabetes management in food bank clients.

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A SPANISH-LANGUAGE VERSION OF THE TYPE 2 DIABETES STIGMA ASSESSMENT SCALE: PSYCHOMETRIC PROPERTIES IN U.S. LATINOS WITH T2D

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Background: There is increasing awareness of social stigma surrounding type 2 diabetes (T2D), with many people feeling blamed and judged by others for ‘bringing it on themselves’ or for food choices, and being treated differently by others (potentially leading to rejection, discrimination, exclusion). Such stigma can also be internalized (self-stigma). There is emerging evidence that diabetes-related stigma is associated with worse physical and emotional health outcomes. The Type 2 Diabetes Stigma Assessment Scale (DSAS-2) was developed and validated in Australia to enable research to determine the extent and impact of diabetes-related stigma. The purpose of this study was to assess the psychometric properties of a newly developed linguistically and culturally adapted Spanish-language U.S. version (DSAS-2 Spa-US) in U.S. Latino adults with T2D.

Methods: Data were collected via an online survey from 520 Spanish-speaking Latino adults with T2D living in the U.S. (mean age 54±10 years, 72% women, 53% with Mexican heritage). Exploratory factor analysis was used to determine the structure of the 19-item DSAS-2 Spa-US using STATA 15. Internal consistency reliability was assessed with Cronbach’s alpha. Concurrent validity was assessed (expected correlation $r > 0.4$) against a measure of perceived stigma across chronic conditions (SSCI-8). Convergent validity was assessed (expected $r > 0.4$) against measures of depressive symptoms (PHQ-8), anxiety symptoms (GAD-7), diabetes-related distress (DDS), loneliness (3-Item Loneliness scale), and general self-esteem (RSE). Discriminant validity was assessed (expected $r < 0.3$) against diabetes duration.

Results: Exploratory factor analysis supported a single scale (eigenvalue=8.20), accounting for 82% of the variance for the 19 items of the DSAS-2 Spa-US, which all loaded > 0.5 on this factor. The internal reliability was high (Cronbach’s $\alpha = 0.93$). DSAS-2 Spa-US had significant (all $p < 0.001$), at least moderate ($r > 0.4$), correlations as expected with the: SSCI-8 ($rs = 0.65$), PHQ-8 ($rs = 0.45$), GAD-7 ($rs = 0.43$), DDS ($rs = 0.56$), 3-Item Loneliness scale ($rs = 0.41$) and RSE ($rs = -0.49$). As expected, DSAS-2 Spa-US was weakly associated with diabetes duration ($rs = 0.07$, NS).

Conclusions: This study contributes evidence that the DSAS-2 Spa-US is a valid and reliable measure of diabetes-related stigma. This will facilitate future research about the extent and impact of diabetes stigma in U.S. Latino adults with T2D.

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CHRONIC DISEASE PREVENTION AMONG YOUNG ADULT LATINAS: BUILDING A DIGITAL HEALTH INTERVENTION

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Background: Latinos are the largest racial/ethnic minority in the U.S., and by 2060 more than half of Californians will be of Latino descent. Rates of obesity, smoking, cardiovascular disease, and some cancers are higher among Latinos than other groups. Latinos are at high risk for developing diabetes yet have some of the lowest rates of diabetes awareness and control. Poor health outcomes from chronic disease typically are not felt until later in life, but younger Latinos need targeted interventions to reduce morbidity and mortality from diabetes and other health challenges. Mobile phone use is high in this population and provides an important platform and opportunity for reaching young Latinas with health information and support.

Methods: We conducted four focus groups with 18-29-year-old Latina women recruited from community locations in Northern California. Perceptions of health and chronic disease, mental and physical health concerns for participants and families, and ideas about health promotion approaches and digital health messaging were discussed. Data was analyzed using NVivo.

Results: Diabetes was reported in almost every participant’s family, along with concerns about overweight, nutrition, cancer, and stress. Participants reported wanting more information about “nutrition and healthy eating because if we learn how to eat right I feel like I can prevent myself from getting all this stuff,” and stating that “diabetes runs in my family and if I was more informed I could make better day-to-day decisions.” Mental health and well-being also were common concerns, stating that “stress is a big topic that needs to be talked about,” and that depression is common in their families but “it’s very taboo where there is no talking about it or you just leave it behind closed doors.” Culturally tailored chronic disease resources were seen as limited: “There aren’t a lot of resources for Latinos like for someone who speaks Spanish” and “When Latinos are diagnosed with diabetes the recommendations are not culturally appropriate and they provide recommendations that are not workable for [Latinos].” Health communications that “feel like a friend is talking to me, and [show] culturally relevant foods and dancing,” include Spanish and “Spanglish” phrases that “remind you of home,” and that are “Latina-based” were appealing. A mobile phone intervention was viewed as an optimal way to reach young Latina women.

Conclusions. Young adult Latinas are worried about chronic disease prevention and management for themselves and their families. A digital health program designed for Latina women that provides text messages, short videos, self-assessments, and recipes and tips promoting physical and mental health is a promising intervention approach.

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A MULTI-METHOD APPROACH FOR IDENTIFYING HIGH-RISK PATIENTS WITH UNMET BEHAVIORAL HEALTH NEEDS IN A SAFETY-NET HOSPITAL SETTING

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Hispanics experience higher rates of chronic cardiometabolic diseases and unmet behavioral health needs than non-Hispanic whites. In turn, these comorbidities place this population at high risk for hospital readmissions. A randomized controlled trial is underway to evaluate the effectiveness of *Mi Puente* ("My Bridge"), a Behavioral Health Nurse + Community Mentor team intervention in reducing readmissions among 560 patients with multiple chronic cardiometabolic conditions (e.g., obesity, diabetes, cardiovascular disease) and behavioral health concern(s) (e.g., anxiety or depression symptoms, chronic stress, health-related distress) who are hospitalized at a safety-net hospital located near the US/Mexico border in San Diego, CA. Here we present important "lessons learned" from our 2-step, multi-method [i.e., electronic medical record (EMR) + paper screener] approach for systematically identifying these high-risk patients in the hospital for intervention.

From June 2016 and July 2019, N=5,273 Hispanic adult admissions with ≥2 chronic cardiometabolic conditions were identified via an automated EMR report (Step 1). However, the majority (n=4,515, 86%) did not complete a behavioral health screening (Step 2) for the following reasons: 42% were unavailable (e.g., discharged; undergoing procedure or sleeping) or refused (e.g., felt unwell); 38% were not approached due to poor current health status, as indicated by nurse/physician report or intensive care unit placement; 6% started but did not complete screening. Of the 758 (14% of those eligible after Step 1) who were successfully screened, 624 (82%) endorsed ≥ 1 unmet behavioral health need(s); significant anxiety (38%) or depressive symptoms (44%), chronic stress (50%), health-related distress (39%), and lack of routine medical care (61%) were most commonly endorsed.

A bedside, paper-based screener identified high rates of unmet behavioral needs that elevate readmission risk, which are often not systematically or comprehensively documented in the EMR. However, only 14% of at-risk patients with multiple chronic conditions were successfully evaluated. Once admitted to the floor, poor and rapidly fluctuating health status, combined with barriers inherent to the acute, inpatient care environment pose challenges to behavioral health screening. In order to effectively intervene and reduce readmissions in high-risk patients, behavioral health screening should be conducted as part of the admission process.

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MERITORIOUS AWARD WINNER

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THE INFLUENCE OF IMPULSIVITY AND PARENTAL CONTROL ON DIET AND WEIGHT IN EMERGING ADULTS

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College marks a critical developmental phase, where emerging adults transition from a period of parental control to increased autonomy in a food-rich environment. As such, college is a high-risk time for weight gain, particularly for students with higher impulsivity- a known risk factor for weight gain and overeating throughout life. In childhood, the degree to which parents control their child's diet (Parental Regulation of Eating) predicts eating behavior. Research suggests an interacting effect of impulsivity and parental regulation on eating behavior in children, however, little is known about the effects of parental regulation of eating in emerging adults.

This study examined the association between impulsivity, parental regulation on eating in emerging adults, eating in the absence of hunger (EAH), and weight change during the first semester of college. It was hypothesized that: (1) greater impulsivity and parental regulation of eating would be associated with EAH and weight change; (2) parental regulation of eating would moderate the effect of impulsivity on EAH and weight change, such that for those with high parental regulation of eating, there would be a greater detrimental effect of high impulsivity on EAH and weight change, than in those with low parental regulation of eating.

This study used self-reported data from second semester college students. Participants (N=785; Age=18.33 +/-0.98; BMI=23.32 +/-4.95) completed measures of impulsivity, parental regulation of eating, EAH, and weight change. Controlling for BMI and gender, higher impulsivity was associated with weight gain (p=.044), with parental regulation of eating's association with weight change approaching significance (p=.059). Parental regulation of eating was not associated with EAH (p=.229), however, there was a trend level interaction between impulsivity and parental regulation of eating (p=.053). At high impulsivity, EAH was similar, regardless of the level of parental regulation of eating. At low impulsivity, high parental regulation of eating was associated with more EAH, compared to those with lower parental regulation of eating.

Findings indicate that impulsivity is associated weight gain in college and that strict parental regulation of eating during adolescence could indeed be detrimental to emerging adults with better self-control, whereas its effects may be overshadowed among adolescents with low self-control.

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AFRICAN AMERICAN FATHERS' PERCEIVED ROLE FOR THE DIETARY BEHAVIORS OF THEIR CHILDREN: A QUALITATIVE STUDY

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Introduction: Mothers have chiefly been the center of research on child-feeding practices with maternal effects being exclusively assessed or used as a proxy for both parents. However, research has rarely focused on fathers or their ability to impact the health behaviors of their children. The purpose of this study is to investigate African American fathers' involvement in promoting healthful decisions and influencing dietary patterns among their children and within their households.

Methods: This exploratory study gathered data via semi structured focus groups (n = 3), which were thematically analyzed utilizing a grounded theory approach. Participants included AA fathers (n = 20) with a mean age of 37 years (± 11.79), all of which had one or more children between the ages of 6 and 18 years.

Results: Three significant subthemes emerged from the focus group sessions, which included fathers' perspectives about: (a) teaching by example; (b) eating healthy is expensive; and (c) cooking and eating at home.

Discussion & Conclusion: Understanding AA fathers' perceived and desired role in their children's health edification can inform initiatives that actively engage these men, and nurture their level of involvement, to promote positive health behaviors among their children. Such efforts are necessary for AA fathers to realize their potential to effectively serve as change agents and actively improve the health of their children, families, and communities.

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Keywords: African American, fathers, obesity, nutrition, diet, health promotion

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COLLEGE STUDENT DIETARY RECALLS AND THE THEORY OF PLANNED BEHAVIOR

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Evidence consistently demonstrates that a healthy diet can both directly and indirectly reduce risk for cardiovascular disease, type 2 diabetes, certain types of cancer, hypertension, and dyslipidemia throughout all stages of the lifespan (Dietary Guidelines Advisory Committee, 2010; NCHS, 2015; Via, 2012; World Health Organization, 2003). However, modifying eating behaviors in emerging adulthood may serve as the most effective approach for primary prevention of chronic disease risk later in life (Liu et al., 2012). Unfortunately, the transition to college is marked by poorer eating behaviors (Anding, Suminski, & Boss, 2001; Deforche et al., 2015; Nelson et al., 2008). The Theory of Planned Behavior (TPB) represents a promising tool for developing targeted behavioral interventions through the examination of attitudes (ATT), subjective norms (SN), perceived behavioral control (PBC), and intention (INT) for healthy eating behaviors. However, there exist several key methodological issues in the literature. The present study utilized an enhanced dietary assessment methodology, the ASA24 dietary recall, and a short-term prospective study design to examine the relative contributions of these psychosocial factors to intent and actual dietary intake using the TPB. Dietary recalls of 68 participants (average age = 20.76 years; 70.6% female; 70.6% non-Hispanic, 48.5% White, 22.10% Black/African American, 13.20% Asian) were analyzed using the Healthy Eating Index (HEI)-2010 scoring system. None of the sample met all of the recommended dietary guidelines and very few (e.g. 0% to 4.4%) met any recommendations, with the exception of protein intake (20.6%). Linear regression indicated that the indirect TPB variables (ATT, SN, and PBC) were related to INT ($F[3,64] = 19.67, p < .001$), although SN did not account for unique variance. Further, the direct TPB variables (INT and PBC) were related to HEI-2010 scores ($F[2,65] = 4.00, p = .023$); however, only PBC accounted for significant variance. Overall, findings suggest that more favorable attitudes relate to intention, but only perceived behavioral control consistently relates to actual healthy eating behavior. Implications of these results suggest that interventions should focus on enhancing the perceived behavioral control of healthy eating behaviors.

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PREVENTION OF EATING DISORDERS USING CHATBOT CONVERSATION

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Introduction: Eating disorders (EDs) – including anorexia nervosa, bulimia nervosa, and binge eating disorder – are some of the most common and disabling mental health disorders. Once developed, they can be difficult to treat and chronic, highlighting the great need for accessible prevention programs. Online guided self-help prevention programs for EDs, such as StudentBodies[®], have demonstrated efficacy (ES > 0.40) when delivered with coach support. However, human coaching limits the program's scalability (e.g., due to cost, training). What is needed is a fully automated prevention program for EDs that retains some of the benefits of what human coaching provides (e.g., follow-up, personalized guidance, support).

Intervention: The StudentBodies[®] program was reworked to be delivered in the form of 8 brief interactive psychoeducational and skill training conversations with an automated chatbot, delivered via text messaging or Facebook messenger. Conversations entail the key tenets of the original program, with participants prompted to complete 2 conversations per week, although access to the chatbot intervention is provided for 3 months. The chatbot is hosted by X2AI, a mental health chatbot company.

Methods: A two-arm randomized controlled trial is currently underway at the national level in the U.S., enrolling 700 women aged 18–30 at risk for an ED, but without a current clinical presentation. Participants are being recruited from 1) online ED screening from the National Eating Disorders Association, or 2) Facebook, and eligible participants are randomized to either the program or a waitlist. Participants are assessed at baseline, 3 months, and 6 months. Primary outcomes include key ED risk factors such as weight/shape concerns and thin-ideal internalization, measured by the Weight Concerns Scale and the Internalization Thin/Low Body Fat subscale of the Sociocultural Attitudes Toward Appearance Questionnaire-4R, respectively.

Results: Preliminary outcomes at post-treatment will be presented.

Conclusion: This study investigates whether a chatbot can be used to deliver and provide support for a preventive ED intervention. If effective, this chatbot-based program could provide a cost-effective, first-line prevention program anywhere, anytime, to females at high risk for the onset of an ED.

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TEN YEAR RESULTS FOR A WORKSITE WEIGHT MANAGEMENT CAMPAIGN: UPMC MYHEALTH WEIGHT RACE

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Background: The number of individuals who are overweight or obese in the U.S. has continued to rise over the past few decades. As a result, employers struggle with the costs associated with increased absenteeism and presenteeism for employees who have health problems associated with obesity. In recent decades, employers have implemented various worksite wellness campaigns to improve health and productivity. Overall, the evidence indicates that worksite weight management programs can positively influence health outcomes and reduce employer costs over time. The UPMC MyHealth Weight Race is a 12-week worksite weight management campaign which features weekly emails and online resources within the framework of a workplace competition to reach weight goals. Employees participate to lose or maintain weight.

Methods: Historic campaign data was queried using Microsoft SQL Server Management Studio 2012 for the years 2008 to 2017. Weight loss was calculated by determining the average and percent weight loss among all participants.

Results: The number of participants ranged from 4,044 in 2008 to 10,054 in 2017. Among participants who lost weight, average weight loss ranged from 6.0 pounds in 2017 to 7.0 pounds in 2008. The average percentage of weight loss ranged from 3.1% in 2017 to 3.6% in 2008. Across all participants in the campaign, the average weight loss ranged from 3.14 pounds in 2016 to 4.30 pounds in 2010. The average percent weight loss for all participants ranged from 1.6% in 2016 to 2.2% in 2008. The number of participants who lost weight ranged from 2,702 in 2008 to 6,367 in 2017; the number of maintainers (those who did not gain or lose any weight) ranged between 883 in 2008 to 1,886 in 2017; the number of weight gainers ranged from 459 in 2008 to 1,801 in 2017. Overall, most participants joined the program in teams as opposed to individuals across all ten years, and most participants completed the program.

Conclusions: As overweight and obesity continue to rise, creative approaches to weight management are necessary across a variety of settings. Worksite wellness campaigns are an important tool to improve reach and address overweight and obesity among large numbers of individuals. The UPMC MyHealth Weight Race findings suggest that an internet-based weight management campaign is a scalable and effective way to engage thousands of employees in weight management education and behavior change. The ten years of results presented are remarkably consistent benchmarks for advancing future campaign development and weight management technology research.

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REPEATED CONSUMPTION OF A FOOD IS NECESSARY FOR HABIT FORMATION, BUT UNDERMINES ENJOYMENT: AN EXPERIMENTAL TEST OF A SOLUTION

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Objective: The formation of healthy eating habits is supported by repeatedly eating specific foods, but repetition can also reduce enjoyment of those foods. There is burgeoning evidence that *salience* of dietary variety (in addition to *actual* variety) increases enjoyment of repetitiously consumed foods, but it is unclear whether variety salience can affect consumption outside of a laboratory setting. In a longitudinal field experiment we tested a brief intervention to remind participants of the variety in their diet. We hypothesized that increasing salience of dietary variety would prevent declines in enjoyment of the food and would increase the likelihood that participants would be willing to eat the food again, after the study ended.

Design: Participants (n = 139) ate a granola bar at the same time each day for two weeks, as they went about their daily life activities. On alternate days, before eating the bar, participants randomly assigned to the treatment condition recalled other recently consumed foods (to increase salience of dietary variety). Control subjects recalled variety in an unrelated domain (music). Participants reported their enjoyment of the granola bar after they ate it each day. At the end of the study, participants returned to collect their compensation, and were free to help themselves to snacks, including granola bars.

Results: Self-reported feelings of enjoyment persistently declined with each additional day of consumption, and contrary to our first hypothesis, increasing salience of dietary variety did not reduce this decline. In support of our second hypothesis, however, increasing salience of dietary variety increased the likelihood that participants would choose to consume the same kind of granola bar again two weeks later.

Conclusion: Brief exercises that make variety in one's diet more salient may not prevent reductions in enjoyment of a repetitiously consumed food, but may still support continued consumption of the food.

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A DEFAULT OPTION FOR HEALTH: IMPROVING NUTRITION WITHIN THE CONSTRAINTS OF FOOD INSECURITY USING ON-LINE GROCERY SHOPPING

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Food insecurity, the limited availability of nutritionally adequate food, is associated with an increased risk for obesity and associated health problems. There is a need for sustainable interventions that improve diet-related health in individuals with food insecurity. In behavioral economics, the default option is the option a consumer selects if they do not make an active choice. The current study tests if the use of a prefilled online grocery cart (i.e., a default option) improves the nutritional quality of groceries purchased online by food pantry users with food insecurity. Thirty-eight adults enrolled and were given \$48.50 to purchase groceries weekly using an online grocery website for five weeks. At baseline, participants were instructed to purchase groceries keeping in mind nutrition, cost, and taste. For the subsequent four weeks (T1-T4), participants were randomized to receive 1) nutrition education or 2) a prefilled online grocery shopping cart that met their nutritional needs based on age and sex (Default). From baseline to T1, participants in the Default condition, had an immediate and significant increase in Healthy Eating Index (HEI) scores (i.e., a measure of diet quality ranging from 0–100; Cohen's $d = 1.13$) and a significant decrease in total calories (kcal; $d = 1.39$) and energy density (kcal/grams; $d = 1.32$) relative to those in the Nutrition Education condition. The initial improvement in diet quality was maintained throughout the treatment period for those in the Default condition (HEI Score $M(SD) = 64(17.38)$, 95% CI for the slope from T1-T4=[-4.10, 0.24]). While calories and energy density gradually increased in the Default condition from T1 to T4, these values were always lower (i.e., consistent with less energy dense grocery purchases) compared with the Nutrition Education condition ($[M_{diff}]$ calories T1: 6,285 kcal, T2: 4,477 kcal, T3: 2,448 kcal, T4: 418 kcal; $[M_{diff}]$ energy density T1: .48, T2: .40, T3: .23, T4: .06). Furthermore, diet quality, calories, and energy density did not significantly increase or decrease during the active treatment period in the Nutrition Education condition (HEI Score $M(SD) = 55(15.12)$, 95% CI for the slope from T1-T4=[-3.35, 0.93]; Calories $M(SD) = 16,140(8,662.20)$, 95% CI=[-1410, 263]; Energy density $M(SD) = 1.57(.60)$, 95% CI=[-0.14, 0.07]). The use of a default option while online grocery shopping may improve food purchasing behavior in individuals with food insecurity. In light of current work by the USDA to test the use of online grocery platforms by SNAP beneficiaries, implementation of this intervention may specifically benefit those living in food deserts with limited access to healthy options.

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AVAILABILITY OF FOOD LABEL INFORMATION IN ONLINE GROCERY STORES

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Background: The popularity of online grocery shopping has surged in recent years with 20% of Americans now shopping online for groceries. However, unlike in brick-and-mortar locations where consumers can view ingredient lists and Nutrition Facts labels (NFLs) on food packages, as mandated by the Nutrition Labeling and Education Act (NLEA), in online retailers, consumers depend on the retailer to post this information. Moreover, the FDA regulates the content of nutrition and health claims on food packages, but there is no oversight of claims made for these same foods when sold through retailer websites. Thus, we sought to examine the extent to which ingredient lists, NFLs, and nutrition or health claims (here, referred to as marketing statements) are present, and easily accessible, at the point of online sale for leading online grocery retailers.

Methods: We coded websites of 15 of the leading online grocery retailers representing traditional, mass merchandise, health, or discount supermarkets. The product types (e.g., soda, pizza) examined were among the leading contributors to calories, food groups, added sugar, saturated fat, and sodium in the U.S. diet. We selected 31 top selling brands (covered by the NLEA), within each product type. Foods were coded for the presence and accessibility (number of arrow downs) of legible ingredient lists and NFLs as well as the presence of marketing statements, and stores were coded for the theme of their homepage. Chi-square tests were used to examine associations among these variables.

Results: Seventy-five percent of products had ingredient lists and NFLs, while 28% of products had marketing statements. Only 2 retailers had ingredients and NFLs for all products; 10 retailers had this information for 68–97% of products; and 3 retailers had this information for < 50% of products. Notably, the largest online retailer of groceries provided ingredient lists and NFLs for only 46% of products examined. Products without marketing statements had more accessible ingredient lists and NFLs ($P < 0.01$). Retailers with a health-oriented theme were more likely to provide both ingredient lists and NFLs (89% vs. 72%; $P < 0.01$), less likely to include marketing statements (10% vs. 32%, $P < 0.001$), and more likely to have easily accessible information (ingredient lists and NFLs) ($P < 0.001$).

Conclusion: Across all stores, ingredient lists and NFLs were available for the majority of foods we examined. However, the frequencies were markedly lower for some retailers and when marketing statements were present. Given past work suggesting that online grocery shopping may discourage the use of nutrition information, it is important to push for legislation to mandate full disclosure of nutrition, calorie, and ingredient information that is easily accessible and to limit nutrition and health statements to only those that are FDA-approved.

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CONTENT AND AFFECT ANALYSIS OF TEXT CORRESPONDENCE OF PARTICIPANTS IN A DIGITAL GUIDED SELF-HELP FOR EATING DISORDERS

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Introduction: The need for effective eating disorder (ED) treatment surpasses available face-to-face resources. Digital guided self-help (GSH) that includes on-line coaching is effective for EDs; however, the perceptions of program participants and their communications with their coaches should be further detailed to better define the needs of the service users.

Methods: Participants in this study were 383 college students (mean age = 22.5, $SD = 5.7$) from 16 U.S. colleges and universities who screened positive for a sub-clinical/clinical ED and received a digital GSH program based on cognitive behavioral therapy for treating their ED. Participants were each assigned a coach who helped them better utilize the intervention through text correspondence. A thematic and affective analysis of texts between users and coaches was conducted by doctoral-level researchers with expertise in mental health and qualitative analysis. Each message was assigned one or more themes, as appropriate.

Results: Participants sent a total of 4,646 text messages to their coaches (range of messages: 0–115, mean = 15.85 messages, $SD = 20.8$). In the initial assessment, 989 messages (21.3%) were coded as detailing technical requests and were excluded from further analyses (Krippendorff's $\alpha = .77$), leaving 3,657 messages of which 732 (20%) were randomly sampled and coded. In the preliminary analysis, 96 codes emerged, which were collapsed into 6 primary themes (Krippendorff's $\alpha = .81$ for overall thematic message coding and .78 for messages' affective tone). The messages mostly focused on (a) their efforts to utilize intervention tools to change their ED-related cognitions, behaviors, and relationships (59.6% of messages), (b) describing symptoms without expressing an active endeavor to change (39.3% of messages), and (c) participants' relationship with their coach (30.3% of messages). Most texts also conveyed either positive (23.1%), negative (32.4%), or mixed affective content (29.8%), demonstrating emotional engagement with the intervention.

Conclusion: Findings suggest that GSH for EDs produces participant involvement, and that participants discuss themes that can inform program development. This study also provides further support for the use of GSH as an effective resource for individuals with EDs, thereby increasing scalability and accessibility of evidence-based ED interventions.

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DELAY DISCOUNTING AND DIET QUALITY

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Background: Research indicates that individuals with a higher BMI are more likely to choose immediate food and monetary rewards, suggesting a relationship between a high energy dense diet and food impulsive choices. Choice-making behavior measured by delay discounting has been associated with higher energy intake in obese individuals. However, the extent to which impulsive behaviors specifically impact nutrient intake is unknown. The purpose of this analysis was to examine relations between delay discounting and diet quality in individuals with obesity.

Methods: This study represents baseline data from participants with obesity enrolled in a nine-month weight loss intervention. Participants completed a 3-day food record (2 weekdays/1 weekend day) and diet intake was analyzed using NDSR. Diet quality was calculated using the Healthy Eating Index-2015 (HEI-2015). Higher HEI-2015 scores are associated with better diet quality. The total maximum score is 100. Impulsivity was measured using a delay discounting task for money (*lnk*). Higher *lnk* is associated with greater impulsivity. All relations between *lnk* and HEI-2015 components were analyzed using IBM SPSS Statistics 25.

Results: Data was collected from 93 participants (~38 years of age, 71% female). The mean HEI-2015 total score was 49.5 ± 7.54 . *lnk* was not associated with HEI-2015 total score ($R^2 = .207$, $\beta = -.026$, $p = 0.78$). However, higher *lnk* scores predicted lower added sugar scores ($R^2 = .067$, $\beta = -.347$, $p = 0.14$), and higher sodium scores ($R^2 = .067$, $\beta = .296$, $p = 0.14$). There were no associations between *lnk* and the other HEI-2015 components.

Discussion: Our results indicate impulsive behaviors do not impact total HEI-2015 scores, but may have an impact on added sugar and sodium intake. Those who had greater *lnk* values tended to consume more added sugar but interestingly consumed less sodium. While additional research is still needed to better explore the relationship between impulsivity and diet quality, our results suggest interventions targeted at decision-making (i.e. self-regulation in the presence of food) may have a positive impact on added sugar intake.

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PATTERNS OF E-HEALTH BEHAVIORS: A LATENT CLASS ANALYSIS

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Background: To maximize the potential of e-health for health promotion and management it is important to explore and understand how people are engaging in e-health behaviors and if there are any populations that are differently engaged in particular e-health behaviors over others. This will allow for more effective targeted recruitment for health interventions, programs that engage individuals with their preferred e-health channel, and/or identification of populations with barriers to e-health use.

This study explored patterns of informational and participatory e-health behaviors within a population of U.S. adults and categorized users into distinct groups based on their e-health behavior patterns and individual characteristics (e.g. demographics).

Methods: Latent Class Analysis (LCA) was used to identify classes of e-health usage patterns of 401 adults surveyed in 2017. The survey contained a total of 109 items with the goal to descriptively understand how individuals were using the Internet for health and engaging in e-health behaviors. The LCA included 14 manifest variables assessing specific informational and participatory e-health behavior engagement. To estimate associations between derived latent classes and participant characteristics, multivariable multinomial logistic regression was conducted using “low e-health users” as the reference group.

Results: The LCA revealed five classes with distinct e-health behavior patterns: “only online searchers” (29.7%), “health trackers” (14.0%), “all-around high e-health users” (7.8%), “shared health experience seekers” (21.2%), and “low e-health users” (27.3%). Compared to the reference group of low e-health users, members of all other classes had high rates of online information seeking. The regression analysis compared the “low e-health users,” to the other classes and found differences in age, sex, health literacy levels, and technology ownership. The “low e-health users” had significantly lower e-health literacy scores compared to the other classes. Higher, more participatory, and more diverse patterns of e-health use were more likely to include adult females.

Discussion: The findings from this study indicate that participants are selective about their e-health use and these patterns are associated with certain demographics, e-health literacy levels, and access to technology. Healthcare providers and practitioners should seek to understand patterns of e-health engagement in their populations of focus to develop interventions and devise strategies appropriate for individuals based on their patterns of e-health access and behaviors.

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MONITORING AND BLUNTING COPING STYLE EFFECTS ON COLLEGE STUDENT PROCESSING OF HEALTH INFORMATION VIA SOCIAL MEDIA

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The dissemination of public health messages via social media is a growing phenomenon that is changing the health communication landscape (Chou, Hunt, Beckjord, Mojer, & Hesse, 2009). Few studies have investigated how individuals process health-threatening information. This study addressed this gap in knowledge. Specifically, the current study investigated the impact of coping style on an individual's attention to health-threatening and health-promoting words on an attention task. The current study also investigated the impact of coping style on the recall of health-threatening, health-promoting, and neutral words contained in a diabetes health message. In addition, the current study investigated if coping style influences the way individuals frame a message when "sharing" information with other social media users after reading a diabetes health message.

This study addressed those aims using two experimental tasks. The first task was a dot probe task to detect any difference in attention to health-threatening and health-promoting words. The second task asked participants to read a diabetes health message and Tweet about what they read. This novel approach was used to measure memory recall, Tweet valence, and the number of health-threatening and health-promoting words or phrases used to construct Tweets. Data analyses included a three-step hierarchical regression model. Step 1 included health anxiety and perceived risk for developing diabetes scores. Step 2 included state anxiety and trait anxiety scores. Finally, Step 3 included monitoring and blunting coping scores.

The final models for all dependent variables were not statistically significant. However, several bivariate correlations were found. Namely, the higher the health anxiety score, the fewer health-promoting keywords recalled ($\beta = -0.19$, $p = 0.01$). Exploratory analyses revealed a primacy effect. Specifically, when health-promoting information was presented first, participant Tweets contained more health-promoting keywords, demonstrated a higher health-promoting valence, and used more health-promoting words and phrases. The results from this study will inform future health communication research on dissemination via social media. This study's innovative approach of investigating reaction times and responses to a health message to create a fuller picture of information processing will add to the health communication literature on how to better assess attention to, and use of, health information.

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WEARABLE ACTIVITY MONITORS EFFECT ON AUTONOMOUS MOTIVATION: RESULTS FROM A PILOT COMPARATIVE EFFECTIVENESS INTERVENTION

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Self-Determination Theory (SDT) outlines several different forms of motivation that fulfill our basic needs of autonomy, competence, and relatedness. The motivational continuum ranges from fully extrinsic to more autonomous forms including identification, integration, and intrinsic motivation. This pilot randomized controlled trial compared the effects of a basic pedometer to a wearable electronic activity monitor (henceforth referred to as "wearable") on SDT constructs. Because wearables provide a number of behavior change techniques not available via pedometer, we hypothesized that autonomous forms of motivation would be higher at the end of the intervention in participants that used the wearable.

Methods: Participants ($n=40$) 55–74 years of age took part in a 12-week physical activity intervention; which included one brief counseling session, followed by 12 weeks of self-monitoring. Participants were randomized to receive a pedometer (Digi-Walker CW-700/701, YAMAX, San Antonio, TX) or a wearable (UP24, Jawbone, San Francisco, CA) and the partnering UP application. The pedometer provided feedback and self-control. In addition, the wearable provided goal setting, information on consequences, barrier identification, action planning, instruction, prompts and cues, social comparison and social support. SDT constructs were evaluated using the Behavioral Regulation in Exercise Questionnaire—2 and the Psychological Need Satisfaction in Exercise Scale. Analysis of covariance was completed using the intent-to-treat principle. Participants with missing outcome data ($n=8$) had a significantly higher baseline identified score than those that completed the intervention ($p=0.02$).

Results: The wearable group produced significantly large effect sizes for amotivation ($d=-0.42$), identified regulation ($d=0.70$), intrinsic regulation ($d=0.85$), competence ($d=1.01$), autonomy ($d=1.13$), and relatedness ($d=0.59$) (all $p < 0.05$).

Conclusions: Motivation for physical activity may be influenced by the type of activity monitor used, absent of continual support from counseling. Future research is needed to determine the most impactful monitor features on motivation and their long-term effects.

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DIGITAL MENTAL HEALTH INTERVENTION FOR MOOD MANAGEMENT IN INCARCERATED INDIVIDUALS

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Introduction: In the United States, over 2.2 million people are incarcerated. Within any given year, approximately 73% of females and 55% of males in jail will experience a mental health problem. This results in the criminal justice system serving as a de facto mental health treatment facility for hundreds of thousands of individuals. More than one in five jails have no access to mental health services.

There is strong evidence that digital mental health interventions for the treatment of mood disorders are efficacious and cost effective. Digital mental health care has many strengths, including the ability to deliver treatment reliably, increase privacy for those seeking services, and to provide scalable evidence-based care. The aim of this project was to develop and pilot a CBT based intervention for mood management to be delivered via tablet to incarcerated individuals.

Methods: Individuals incarcerated in the Middlesex County, MA and Woodford County, IL jails enrolled to receive 4 weeks of a CBT mood intervention delivered via tablet. The intervention consisted of eight lessons related to CBT concepts released twice per week and three tools to practice the CBT concepts. Participants completed assessments at baseline, week 2 and week 4.

Results: 52 participants enrolled in the intervention. Depression and anxiety scores decreased over time, falling from the moderate range (BDI = 18.8; GAD = 11.5) to the mild range (BDI = 11.4; GAD = 7.1). Lessons completed decreased over time, with 41 participants completing the first lesson and only 11 participants completing the eighth lesson. However, if participants completed a didactic lesson, they were likely to complete the associated tool. Satisfaction ratings were high (5.8 out of 7). Drop out was high, with only 10 participants completing the week 4 assessments.

Conclusions: Approximately 80% of participants who completed the intervention showed improvement or remained stable in mood symptoms. Those who completed lessons also completed the interactive tools and rated them highly for satisfaction and ease of use. Although the drop out rate was high, the pilot jails were short-term facilities and we were unable to track release dates, thus it is unknown how many individuals discontinued use due to release/transfer. This pilot suggests it there is interest and potential benefit in digital mood interventions for incarcerated individuals but that modifications are needed to improve adherence.

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FEASIBILITY AND ACCEPTABILITY OF WEB-BASED BEHAVIORAL INTERVENTION IN MEN WITH PROSTATE CANCER (PCA): A RANDOMIZED PILOT TRIAL

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Background: Diet and exercise may be associated with quality of life and survival in men with prostate cancer. Yet, few men follow national nutrition and physical activity guidelines for cancer survivors. A web-based program could be a scalable approach to disseminate information and provide support for behavior change. We aimed to determine the feasibility and acceptability of a remotely delivered web-based behavioral intervention among men with prostate cancer.

Methods: We conducted a 4-arm pilot trial of a 12-week intervention among men with prostate cancer (clinicaltrials.gov Identifier: NCT03406013). The study was conducted at Oregon Health and Sciences University (OHSU), University of California San Francisco (UCSF), and University of Colorado Denver. Men were recruited through cancer registry databases, CaPSURE (a nationwide prostate cancer registry study), and in clinic. To be eligible, men had to self-report a prostate cancer diagnosis, have a personal device that connected to the Internet, be 18 years or older, able to read English, and able to receive text messages and email. Men currently receiving chemotherapy or radiation, or who reported potential contraindications to exercise, could participate with physician clearance. Each site recruited patients; OHSU performed study-related tasks; UCSF performed data analysis. Participants were randomized (1:1:1:1) to additive intervention levels: (1) static website; (2) website plus personalized diet and exercise prescription; (3) website, personalized prescription, plus Fitbit and text messages; and (4) website, personalized prescription, Fitbit, text messages and a 30-min call with an exercise trainer and a 30-min call with a registered dietician. Participants completed surveys at enrollment, 12-weeks, and 24-weeks. Our primary outcomes were feasibility (accrual, attrition, website use) and acceptability (survey data).

Results: Between August 2017 and September 2018, we screened 259 men for eligibility. Of these, 217 were eligible and 202 were randomized (Level 1: 49, Level 2: 51, Level 3: 50, Level 4: 52); 198 men received their assigned interventions (47, 49, 50, 52 in Levels 1–4, respectively). Follow-up was 85% at 12 weeks and 79% at 24 weeks. Preliminary analyses indicate that the average age was 69 years, average body mass index was 27.3 kg/m², 93% were non-Hispanic white, and 93% had 2-year college or more education. Website visit frequency varied by level (median: 3, 10, 11, 6 visits for Levels 1–4, respectively) and the majority of men were satisfied or very satisfied with the intervention (53%, 68%, 58%, 67% for Levels 1–4, respectively).

Conclusions: A remote behavior intervention is feasible and acceptable among men with prostate cancer.

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FACTORS PREDICTING CLINICAL DECISION SUPPORT USE BY EMERGENCY DEPARTMENT PROVIDERS

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Background: Computed tomography pulmonary angiography (CTPA) use for the evaluation of pulmonary embolism (PE) has quadrupled over the past decade since the landmark PIOPE II trial established it as both highly sensitive and specific for the diagnosis of PE. Increased utilization however, has been associated with decreasing diagnostic yields (*fewer positive studies*) and rising concerns about the harms of unnecessary testing. The object of this study was to determine if clinical decision support (CDS) use would be associated with increased imaging diagnostic yields, determine if this association would remain after controlling for patient and provider factors and characterize CDS use.

Methods: We performed a retrospective cohort study in the Emergency Departments (ED) of two tertiary care hospitals of all CTPAs performed between August 2015 and September 2018. Providers ordering a CTPA are routed to an optional CDS tool which allows the providers to use a well validated clinical prediction rule for estimating pre-test probability for PE. Based on calculated pre-test probability there is a recommendation for either a blood test or CTPA. Logistic regression compared CDS users and non-users. CTPA diagnostic yield was calculated for users and non-users for all performed studies and stratified by provider type. Propensity score matching based on patient age, gender, race, number of comorbidities and ED crowdedness, time and month of visit and provider type was used to address selection bias among the user and non-user groups.

Results: A total of 7,367 CTPAs were ordered to evaluate for PE during the study period, excluding those with a previous abnormal d-dimer. Of those, providers used the CDS tool in 2,568 (35%) cases and did not use the tool in 4,799 (65%) of cases. In cases of tool use patients had more comorbidities, the ED was less likely to be crowded and use was more likely to occur during the Spring and Winter seasons and during daytime hours. Resident providers were more likely to use tool compared to Attendings and Physician Assistants. After propensity score matching CTPA yield was 11.99% in the tool user group and 8.70% in the tool non-user group ($p < 0.001$). Attending, Resident and Physician Assistant CDS users demonstrated a 56.5% ($p = 0.006$), 38.7% ($p = 0.01$) and 16.7% ($p = 0.03$) increased yield compared to non-users of same provider type respectively.

Conclusion: We found CDS tool use differed based on several factors including provider type, ED crowdedness and test time of day. The percent of CTPA studies positive for PE was 38% higher in tool users vs. non-users when controlling for selection bias in tool use with propensity score matching. Further research should focus on targeting factors associated with low CDS use.

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THE RELATIONSHIP BETWEEN MOBILE APP ENGAGEMENT AND MEDICATION ADHERENCE IN ASTHMA AND COPD

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Introduction: Respiratory illnesses like asthma and chronic obstructive pulmonary disease (COPD) often place a burden on patients, and adherence to daily medication regimens can be challenging, resulting in suboptimal treatment. Digital health solutions like smartphone applications (apps) may help ease this burden and promote adherence through tailored reminders and education. However, little is known about patient behavior within a self-management app and how this affects medication adherence.

Methods: We examined up to 19 months of data from adults (18+) with self-reported asthma or COPD. Patients downloaded a smartphone application on their phone (Propeller Health, WI) and attached a small electronic sensor to their rescue and controller inhaler medications. Patients received daily audio and visual reminders to take their controller medication. Medication usage was monitored passively and data was provided back to the patient through the app in real time. All patients agreed to Propeller's Terms of Use. We examined the frequency of app engagement (defined as app opens per day) as well as time spent in the app (duration in seconds). We classified patient days as low or high engagement, where high engagement was defined as any app open and with an average app session duration > 90th percentile. We ran linear mixed-effects longitudinal models to estimate the relationship between engagement and adherence in asthma and COPD.

Results: 4,670 patients were included in the analysis: 75% ($n=3,511$) with asthma (mean [SD] age: 38.2 [12.4], 80% female) and 25% ($n=1,159$) with COPD (mean [SD] age: 59.7 [9.4], 68% female). Overall, unadjusted mean adherence was higher among patients with COPD (50%) than with patients with asthma (36%). Among patients with asthma, at least one app open and high session duration were associated with 8.6% (95% CI: 8.3%, 8.9%) and 8.5% (8.2%, 8.8%) higher absolute adherence ($p < 0.001$), respectively. Among patients with COPD, at least one app open and high session duration were associated with 6.6% (6.2%, 7.0%) and 5.1% (4.7%, 5.6%) increase in higher absolute adherence ($p < 0.001$), respectively. Finally, for every one app open there was a 3.6% increase in adherence in asthma and 1.7% in COPD (both $p < 0.001$).

Conclusion: Patient engagement with mobile applications is associated with improved medication adherence in asthma and COPD. Further, patients with COPD, while older, had greater app engagement and better adherence to inhaler medications. Findings should be explored further in a more robust trial design, with attention given to both passive and active behaviors within a mobile app.

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EHEALTH DESIGN: WHICH PERSUASIVE AND BEHAVIOR CHANGE TECHNIQUES MEET THE USER NEEDS FOR WEIGHT MAINTENANCE SUPPORT?

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Background: Maintaining weight after weight loss is a significant challenge, as only 1 in 4 maintain such weight loss long-term. New and innovative approaches are called for, and eHealth technologies might be one solution to meet user needs and support people with obesity to maintain weight loss long-term.

Aim: To identify; a) unmet needs of people with obesity aiming to maintain weight loss, as well as solicit input from other related stakeholders, b) persuasive system design features and behavior change techniques matching user needs, and c) design requirements for an eHealth solution in support of long-term weight maintenance.

Method: First, a scoping literature review was performed to identify persuasive and behavior change techniques stimulating motivation and adherence for long-term weight loss maintenance. Second, participants (N=38) have contributed in individual interviews and workshops, performed to identify user needs and preferences. Users were defined as a) people with obesity experiencing weight maintenance challenges (n=20; i.e., adults ≥18 years, BMI ≥30 kg/m²), and b) healthcare providers (n=16; i.e., medical specialists, health psychologists, nurses, nutritionists, general practitioner). Additional stakeholders (n=2) interviewed were policy makers (i.e., from the Norwegian Directorate of eHealth) and a user organization representative (i.e., the Norwegian association for people with obesity).

Results: The scoping review identified the most common behavior change techniques (e.g., goal setting, monitoring, planning, shaping knowledge) and persuasive design features (e.g., personalization, praise, real-time feedback, rewards) used to stimulate motivation and adherence in weight maintenance interventions for patients with obesity. Interviews and workshops revealed that personalization, planning and monitoring, goal setting, insights into own behavior, habit and decision support, motivation to keep focus, positive feedback, social support and rewards are some essential user needs to establish and maintain healthy behaviors over time.

Conclusion: Digital developments carry the opportunity to develop smart, value-driven and personalized solutions that can motivate and aid sustainable health behaviors in support of long-term weight loss maintenance. The presented results provide input for further technology development and multicenter testing of an eHealth intervention in support of long-term weight maintenance.

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TESTING PROTOTYPES OF THE “HEALTHY JUNTOS” DIGITAL OBESITY PREVENTION INTERVENTION FOR HISPANIC ADOLESCENTS AND THEIR PARENTS

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The aim of the study was to conduct formative research of a family-based eHealth obesity prevention intervention for Hispanic parents and adolescents. As part of our user-centered design approach, we developed visual mock-ups to gather user feedback and assess product usability. Grounded in behavior change and family systems theories, the 8-week intervention consists of educational tools (didactic health videos, games, recipes, workouts), behavior skills training (step count, monitoring diet/physical activity), and parenting and family motivational tools (podcast, comparing goals, family activities). Hispanic parents (N=15, 92% female; 45.7±4.8 years; BMI=30.3±4.0) and adolescents (N=15, 54% female; 14.3±1.2 years; 46% normal weight, 54% overweight) participated separately in a semi-structured interview. We showed them paper and minimally-functioning prototypes and asked them to “think aloud” while interacting with the mock-ups to understand their navigation of the intervention, identify potential problems, and assess their interpretation of the prototype’s design elements. Afterwards, participants rated prototype usability through the Computer System Usability Questionnaire (CSUQ). Transcripts were analyzed by three researchers independently using a rapid assessment approach to identify key themes. Participants provided suggestions for improving aesthetics (icon design, image quality), comprehension (simple directions, better feature descriptions), and content (removal of certain features). Participants reported mostly positive feedback on prototypes, including ease of use, functionality/organization, ability to compare parent and adolescent progress, as well as enthusiasm for recipes and exercise components. Based on participants’ feedback, significant changes were made to the intervention prototypes, including aesthetics (icons, logo), comprehension (clearly labeled icons, development of instructional welcome video), and content (focus on proper form in workout videos, healthy alternatives to typical Latin foods). Results from the CSUQ showed high scores for adolescents and their parents (range 1–7) in the subscales of usefulness (5.9 vs. 6.3), ease of use (6.0 vs. 6.5), ease of learning (6.5 vs. 6.8), and satisfaction (5.9 vs. 6.2) with non-statistical significant difference. Study findings were used to inform the development of a fully functional prototype of the intervention for use in an upcoming pilot randomized controlled trial.

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AN EXPLORATION OF RACIAL DIFFERENCES IN A PILOT RANDOMIZED CONTROLLED TRIAL OF THE PTSD COACH APP AFTER CRASH-RELATED INJURY

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Objective: Compared to other races, Black/African Americans (herein referred to as Black) have the highest lifetime prevalence and risk of developing posttraumatic stress disorder (PTSD) after trauma; yet, they are also less likely to seek out and complete treatment for PTSD. Traditional psychosocial interventions are costly and resource intensive, thus limiting implementation. Mobile health (mHealth) strategies present a unique opportunity to engage minorities in need of mental health care. The “PTSD Coach” smartphone app is an evidence-based biopsychosocial tool for PTSD symptom (PTSS) monitoring and management. We explored whether PTSD Coach serves to prevent or reduce posttraumatic sequelae among a subgroup of acutely injured Black patients involved in a motor vehicle crash (MVC); we also explored racial differences in post-injury sequelae.

Method: Within 24 hours post-MVC, we recruited 64 injured adults (56% non-White) from two emergency departments (EDs) into a pilot randomized controlled trial (RCT) testing the feasibility and efficacy of PTSD Coach. Subjects were randomized to either PTSD Coach ($n = 33$) or treatment as usual (TAU; $n = 31$). A subgroup of 27 patients self-identified as Black (63% Female; M age = 36), with 14 (52%) assigned to PTSD Coach and 13 to TAU (48%). PTSD Coach subjects were instructed to use the app as desired for 1-month. Follow-up assessments occurred at 1-month and 3-months post-enrollment.

Results: Retention rates throughout 3-months post-injury were high among Black (78%) and White (73%) patients. Black (vs. White) patients reported higher levels of pre-injury ($M = 12.04$ vs. 6.61; $p = 0.02$) and 3-month PTSS ($M = 24.71$ vs. 13.39; $p = 0.08$), and lower PTSS coping self-efficacy at baseline ($M = 64.83$ vs. 74.27; $p = 0.059$) and 3-months post-injury ($M = 61.43$ vs. 81.42; $p = 0.03$). Whereas no group differences emerged for the full sample, subgroup analyses indicated significant improvements in outcomes for minorities: Specifically, Black subjects in the app group (compared to those in TAU) reported significantly fewer PTSS ($M = 14.90$; $SD = 10.45$ vs. 33.64; $SD = 27.13$; $F = 4.12$; $p = 0.05$) and higher PTSS coping self-efficacy ($M = 77.62$; $SD = 22.25$ vs. 46.72; $SD = 35.32$; $F = 5.62$; $p = 0.03$) at 3-months; effect sizes were large (Cohen's $d = 0.91 - 1.05$).

Conclusions: This sample reflects a typically underserved population who is particularly vulnerable to adverse post-injury sequelae but may have limited resources and contact with the healthcare system post-ED discharge. These preliminary findings suggest that Black patients benefited from PTSD Coach after injury; larger scale future research is needed to determine if and how these effects are related to ethnic disparities. Despite the small sample size, PTSD Coach may serve as an appropriate and scalable candidate for further investigation among groups who may not have access to other treatment modalities.

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A 12 MONTH INHALER SENSOR-BASED, MHEALTH INTERVENTION IMPROVES PEDIATRIC ASTHMA CONTROL AND CAREGIVER QUALITY OF LIFE--AN RCT

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Background: Asthma imposes substantial burdens upon society affecting nearly 10% of school-aged children in the US and costing approximately \$82 billion annually. Research suggests that approximately 1 in 4 asthma exacerbations and over half of asthma-related hospitalizations are attributable to ICS non-adherence. While sensor-based electronic monitoring of daily inhaled corticosteroids (ICS) may improve asthma-related outcomes via improved ICS adherence, the effectiveness of sensor/app-based, clinically-integrated mobile technology interventions, particularly among Black and Hispanic pediatric asthma patients is largely unknown.

Methods: In the iTRACC randomized-controlled trial, 252 racially/socioeconomically diverse caregiver-child dyads were randomly assigned to receive Propeller Health's app-based inhaler sensors that allowed for caregiver and clinician electronic monitoring of ICS/short-acting beta antagonist medication. The primary endpoint was asthma symptom control as assessed by the asthma control test. Secondary end points included pediatric asthma caregiver quality of life (QoL), ICS adherence, emergency department (ED) visits, hospitalizations, and oral corticosteroid prescriptions. Questionnaires were administered at baseline, 3, 6, 9 and 12 month follow-up. Multilevel general linear models estimated changes in adjusted mean values from baseline.

Results: In total, 252 caregiver/child dyads were randomized to the routine-care control ($n=127$) or intervention ($n=125$) groups. At 12 months, the adjusted mean ACT score increased from 19.1 (SE=0.3) to 21.8 (SE=0.4) among the intervention and from 19.4 (SE=0.3) to 19.9 (SE=0.4) among the control (Δ Intervention-Control=2.2; SE=0.6; $p < 0.01$). Relative to the control, caregiver asthma QoL was greater at 12 months (Δ Intervention-Control=.26; SE=.15; $p=.09$). Adjusted 12-month rates of ED visits and hospitalizations among intervention participants were also greater (IRRED=2.2; 95% CI: 1.4 - 3.6; IRRHospital=3.4; 95% CI: 1.5 - 7.8) relative to controls. While observed intervention effects on asthma control were invariant across insurance status (public vs private) some evidence of effect modification was present by race, with non-Hispanic Black children observing the greatest, most sustained improvements in asthma control across the study period. No effect modification by sociodemographic factors was observed for any of the other assessed outcomes.

Conclusions: Intention to treat analyses from this RCT shows that a sensor/app-based MTI can improve asthma control and quality of life over a 12 month period among a diverse sample of children with moderate/severe persistent asthma. Follow-up per-protocol analyses will seek to identify subpopulations who may be particularly likely to benefit from similar mobile technology-based interventions in the future.

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A DARK SIDE TO MOBILE HEALTH? WORRY AND NOCEBO EFFECTS ABOUT NEW TECHNOLOGY

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New technologies and innovations have often bettered population well-being and societal function; yet, these are also often initially accompanied by worry and fear. In some cases, such worries can impede, or even prevent entirely, the adoption of the technology. Mobile health (mHealth), a discipline broadly focused on employing ambulatory technologies to improve the affordability, reach, and effectiveness of health promotion and clinical intervention approaches, offers new innovations and opportunities. Despite emerging evidence supporting mHealth efficacy (e.g., for improving health outcomes), some individuals have concerns about mHealth technology that may impede scalability, efficacy, and, ultimately, the public health benefits of mHealth. We present a review and conceptual framework to examine these issues, focusing on three overarching themes: biophysiological, psychological, and societal concerns. There are features of mHealth that produce worry about the potential negative effects on individual health (e.g., due to exposure to electromagnetic or radio waves), despite evidence supporting the safety of these technologies. When present, such beliefs can lead to worry that gives rise to the experience of unpleasant and concerning physical symptoms (i.e., the nocebo effect). This may represent an important implementational barrier due to apprehension towards beneficial mHealth products (or features thereof, such as wireless charging, wearable or implantable sensors, etc.) and may also have broader ramifications (e.g., leading to economic, governmental and legislative actions). In addition to reviewing evidence on these points, we provide a broad three-step model of implementation research in mHealth focused on understanding and preventing health concerns to facilitate the safe and effective scalability of mHealth (and that may be generalizable and applied to similar technologies): first, evaluating and better discerning public (mis)perceptions (and how these may differ between populations); second, developing theory-based public health communication strategies regarding the safety of mHealth; and third, disseminating this messaging using evidence-based

Methods: Collectively, these steps converge on reviewing evidence regarding the potential role of worry and nocebo in mHealth and providing a model for understanding and changing attitudes and preventing unfounded negative perceptions related to mHealth technology.

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BASELINE PREDICTORS OF ENGAGEMENT IN A DIGITAL WEIGHT MANAGEMENT INTERVENTION FOR YOUNG ADULTS

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Introduction: Digital interventions for the delivery of weight loss treatments for young adults with overweight and obesity offer an opportunity to deliver lifestyle interventions at a low cost and with wider reach. It is important for researchers and health care providers to identify the participants most likely to engage in such programming.

Methods: Young adults with overweight/obesity (n=459; 78.6% female, mean \pm SD: age 23.3 ± 4.4 years, weight: 86.6 ± 15.6 kg, body mass index [BMI] 31.2 ± 4.4 kg/m²) were recruited from two sites and randomly assigned to receive one of three digitally delivered weight management interventions. We calculated an engagement score as percent of highest possible engagement (0–100%) using three weekly components cumulatively summed over 6 months (N=78 possible points): responding to text messages, “seeing” or “liking” intervention content on Facebook, or viewing summative/personalized reports. We also constructed a binary indicator of engagement (< 66% vs. $\geq 66\%$) to compare the engaged to the unengaged. We assessed 15 baseline candidate predictors including demographics (age, sex, race/ethnicity, and site), physical characteristics (BMI, waist circumference, weight, fasting glucose, and HbA1c), and behavioral characteristics (total caloric intake, diet quality, physical activity, self-efficacy, perceived stress, and self-report of social media engagement).

Results: Six-month percent engagement among all participants was 54.5 ± 21.5 . Age, race/ethnicity, and school were significantly different between those engaged and those unengaged in treatment. In univariate analyses, the engaged participants were more likely to be older (p=0.039), non-Hispanic white (p=.015) and have higher fasting glucose (p=0.029) but lower HbA1c (p=0.025). Engagement was positively associated with both social engagement (p=0.007) and total caloric intake (p=0.007). Several predictors of engagement as a continuous measure met the criterion of being statistically significant (p< .05) in the univariable analyses and selected by the Lasso regression. The predictors (ordered from highest to lowest squared semipartial correlation coefficient) race/ethnicity, age, social media engagement, school site, HbA1c, total caloric intake, and fasting glucose accounted for 13% of the variation in engagement.

Conclusions: Uptake of digital interventions for weight loss among young adults may be most likely for individuals with certain characteristics. Our results suggest that the older non-Hispanic white graduate students already engaged in social media appear to be the most likely to engage with the intervention. Uptake of digital interventions for weight loss among young adults may be most likely for individuals with certain characteristics, continuing to identify and understand those characteristics may lead to deeper engagement with digital interventions.

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DEVELOPING AN AUTOMATED VIRTUAL WALKING COACH FOR UNDERSERVED, SEDENTARY PATIENTS IN PRIMARY CARE: ANALYSIS OF PILOT DATA

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Introduction: Low-burden, scalable interventions to increase daily steps in underserved patients are needed. Artificial intelligence can automate health coach-patient dialogue to increase accessibility to health coaching. We pilot-tested an mHealth intervention within a busy clinic to help ethnic-minority, sedentary patients set weekly walking goals. The long-term goal is to develop an automated virtual walking coach.

Methods: Sedentary adults ages 21–65 with body mass index (BMI) >25kg/m² and a smartphone were recruited from a primary care clinic in a minority-serving academic health center. Patients received a Fitbit and two-way text-based coaching for 8 weeks. Using texts, patients set weekly specific, measurable, attainable, relevant, timely (SMART) step goals with reminders and encouragement from a coach. Daily steps were tracked through MyTapp, a research texting platform. In addition to descriptive statistics, a linear mixed-effects model assessed overall trends in steps and simple linear regression assessed trends within patients. Bivariate linear mixed-effects models examined associations between patient characteristics and daily steps.

Results: The analytic sample consisted of 1,323 days with step data from 28 patients with multiple comorbidities, of whom 21 (75.0%) were female, 23 (82.1%) were African American, 4 (14.3%) were Hispanic, and 1 (3.6%) was White. Average baseline age was 47.3 years (SD=9.9). Average baseline weight in pounds and BMI were 237.3 (SD=58.6) and 39.3 (SD=9.3), respectively. The daily average number of steps was significantly higher in Week 8 than in Week 1 (8,336 [SD=3,913] vs. 7,018 [SD=3,704]; p=0.04). Each day in the intervention was associated with a non-significant average increase of 9 steps (p=0.17). Linear regression revealed that 7 (25.0%) patients had a significant increase in daily steps during the intervention, while 2 (7.1%) had a significant decrease, and 19 (67.9%) had no significant change. In bivariate analyses, variables significantly associated with increased steps were younger age, lower BMI, Hispanic and White vs. African American ethnicity, higher self-reported health, and employment vs. unemployment.

Conclusion: The results from this pilot of weekly facilitated text-based goal setting showed early promise towards increasing steps in vulnerable patients. Future work will use imitation learning, sentiment analysis, dialogue modeling, and behavior change theory to continue building an automated virtual coach.

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DEVELOPMENT OF A BILINGUAL FACEBOOK MESSENGER CHAT TO PROMOTE SMOKING CESSATION AMONG YOUNG ADULTS

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Background: Despite major advances in tobacco control and treatment, tobacco use remains the single largest preventable cause of morbidity and mortality in the US. Smoking rates vary by age group, with young adults 18–29 experiencing the highest smoking rates in South Texas (24%). Research shows that support delivered through mobile phone text messaging doubles rates of biochemically validated smoking cessation rates. Quitxt is a mobile phone texting system for smoking cessation promoted in South Texas via social media advertising. A group analysis of 798 Quitxt participants with a mean age of 29.3 found that 21% of the enrollees reported abstinence at 7 months. This confirmed that a text and mobile media service specifically designed for young adults provides a feasible, potentially cost-effective approach to promoting cessation. Quitxt is now being tailored to not only reach Latinos but also non-Latino white and African American young smokers. In addition to the original texting platform, we developed a protocol to deliver Quitxt via Facebook Messenger Chat.

Objective: We present the design and development process of a theory-based, bilingual, interactive Facebook Chat to promote smoking cessation among young adults.

Methods: We conducted focus groups (3) and an online survey (200 young adult smokers) to assess images, video testimonials, and messages for social media and updated webpages linked to in Quitxt text messages. Results informed the development of the Facebook Messenger Chat prototype. After pre-testing, the final chat version is now active for recruitment.

Results: Survey respondents and focus group participants positively reviewed the images, messages, and videos, within the Quitxt mobile program, with the suggested addition of more information on negative consequences of smoking. Suggestions to improve the linked-to web content included adding more color and logos for credibility. Facebook was the most popular social media platform for participants, making the Messenger Chat a viable, appropriate way to offer the program. This platform also enabled additional graphic content (gifs and memes) to make the messages more appealing to young adults.

Conclusions: We followed an iterative design process to develop a bilingual, culturally tailored and interactive Facebook Messenger Chat prototype to deliver our Quitxt smoking cessation program. The anticipated outcome is a scalable, evidence-based, easily disseminated smoking cessation intervention.

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BARRIERS AND FACILITATORS TO IMPLEMENTING A DIGITAL TOOL TO SUPPORT SHARED DECISION MAKING IN CHRONIC HEALTH CARE

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Background: Digital health and shared decision making (SDM) interventions have shown to positively impact chronic disease management by improving access to care, patient-provider communication, clinical outcomes and health related quality of life (HRQoL). Despite these benefits, successful implementation of such interventions into regular clinical practice is challenging. This underlines the need to understand why and how different factors can affect the translation of research findings into clinical practice.

Objective: To identify; a) potential barriers and facilitators for the use of a digital SDM tool to improve patient-provider communication regarding symptom management for patients with chronic disease at two outpatient clinics, b) key aspects for an implementation plan.

Method: The Consolidated Framework for Implementation Research (CFIR) was used to guide the data collection and analysis from focus group discussions and workshop with health care providers (n=14) from two outpatient clinics at a university hospital. Transcripts were analyzed using thematic analysis.

Results: Data were coded into the five CFIR domains; 1) **Intervention characteristics:** a digital tool was perceived to potentially improve patient-provider communication compared to current practice with no system for symptom assessment or no opportunity for digital communication. Lack of integration with existing digital systems was perceived as a barrier. 2) **Outer setting:** patients experience symptoms that impact HRQoL, which are not always known to providers in current practice. A digital symptom assessment, could improve patient-provider communication and symptom management. 3) **Inner setting:** Current practice was hectic, including many phone calls from patients. Engagement from leaders and dedicated personnel, which wanted to improve patient-provider communication, could support the implementation. 4) **Characteristics of individuals:** Some participants were concerned about increased workload, others were skilled and motivated. 5) **Process:** Suggestions for the implementation plan; involving key stakeholders in development of content and software design, external facilitation, information, training, coaching, and a pilot test.

Conclusion: The CFIR framework was useful for identifying pre-implementation barriers and facilitators. Addressing stakeholder-identified barriers and facilitators, before implementing a digital SDM tool in chronic health care settings, may support successful implementation and sustained use. This study highlights directions for future research related to implementation of digital health technology into clinical practice.

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TRANSLATING AN EFFICACIOUS ILLNESS MANAGEMENT INTERVENTION FOR YOUTH WITH POORLY CONTROLLED ASTHMA TO REAL WORLD SETTINGS

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Urban low-income adolescents with asthma are at risk for frequent emergency department (ED) visits. They are also at risk for poor asthma management, a potentially modifiable factor in reducing disparities. EDs present an opportunity for referrals for behavioral health services to improve asthma management. Electronic referral portals have been shown to improve both quality of care and patient outcomes. However, use of these portals by healthcare providers is variable. The purpose of the study was to explore barriers and facilitators to the use of an ED-based electronic referral portal for urban adolescents with asthma and multiple ED visits to a community-based agency providing home-based asthma education services. Six urban pediatric ED healthcare providers (i.e., physicians and nurse practitioners) participated in semi-structured individual interviews. Interview development and subsequent coding was based on the Theoretical Domain Framework (TDF), an implementation framework consisting of 14 domains of behavioral determinants including cognitive, affective, social and environmental influences. Two ED providers conducted interviews and coded the transcribed interview data using directed content analysis. Transcripts were independently coded to consensus with Nvivo v12, with acceptable inter-rater reliability (weighted kappa=0.75, 97% agreement). Four TDF domains were relevant for understanding portal use: Environmental context/resources, Social influences, Reinforcement, Memory attention and decision processes. Environmental context/resources emerged as a barrier to portal use when it was explained that time constraints secondary to heavy workload and high volumes lead to forgetting to make referrals. Reinforcement was frequently identified as a facilitator as participants reported the need for reminders to help remember to use the portal, such as EMR-generated prompts, signage in the ED, and physician champions. Optimism about the usefulness of the portal to connect eligible families with care also emerged as a potential facilitator to its use. In sum, TDF helped elucidate several important barriers and facilitators to ED providers' use of a referral portal for behavioral care for high-risk asthmatic youth. Additional studies are needed to develop effective strategies to increase usage of such ED referrals which can lead to better health outcomes for high-risk urban youth with asthma.

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IMPLEMENTATION OF SCHOOL-BASED DENTAL SEALANT PROGRAMS: IMPLEMENTATION CHALLENGES & ADAPTATIONS.

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In Behavioral Medicine and Public Health, very little research has involved the dissemination and implementation of dental health programs. Emphasis has been mainly on efficacy trials. There is an ample body of evidence supporting the effectiveness of School-Based Dental Sealant Programs (SBDSPs) with regards to increasing access to dental health care, reinforcing oral health behaviors, and direct application of preventative treatments that reduce dental caries for school-aged children (most commonly 6–13 years old). However, it is unclear if the implementation of these programs can be accomplished more efficiently. The purpose of this study was to assess the implementation processes and adaptations associated with the delivery of SBDSPs. We conducted a multiphase study to characterize the implementation processes employed by SBDSPs in Oregon which involved 1) a semi-structured focus group interview with SBDSP state representatives; 2) participant observation of statewide SBDSPs certification training; and 3) semi-structured interviews with locally managed SBDSPs (the focus of this study). The Semi-structured phone interviews in phase III were guided by the Implementation Stages Framework and were conducted with a purposive sample of SBDSPs agencies ($n=5$ agencies; 18 personnel including program directors, supervisors, & dental providers) implementing SBDSPs in elementary and middle schools in the State of Oregon. Through qualitative analysis, we identified multiple challenges associated with school, and parent/guardian engagement, staff training and scheduling, school preparedness, and compliance, intra-agency and inter-agency communication, workforce turnover, program reach, and program service delivery and client flow. We also identified program adaptations employed by the agencies to address these challenges. For instance, agencies used the Oregon Health Authority SBDSPs annual certification training as an informal ad hoc networking opportunity to share adaptations specific to other implementation challenges (e.g., client recruitment). Our findings contribute to dissemination and implementation research knowledge on programs intended to improve oral health and oral health behavior. We have identified essential communication strategies, adaptations to improve reach, and potential solutions to facilitate efficient service delivery and client flow.

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IMPROVING KNOWLEDGE OF EMERGING THERAPEUTICS FOR HIV PATIENTS THROUGH A SOCIAL-CONSTRUCTIVIST CONTINUING EDUCATION ACTIVITY

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Antiretroviral therapy (ART) regimens are associated with fewer toxicities and better efficacy, yet, clinical challenges persist. Patients with HIV/AIDS may be on decades-long ART treatment regimens, so maximizing the safety and tolerability of therapy, while preventing the development of resistance, remains precariously imperative.

Current guidelines recommend ART regimens incorporating two nucleoside reverse transcriptase inhibitors (NRTIs) plus a third drug from either the boosted protease inhibitors, integrase strand transfer inhibitor, or the non-NRTI classes. While effective, NRTIs have been associated with long-term adverse effects. ART regimens using only two drugs may potentially limit drug exposure and reduce risks for adverse events, drug interactions, and long-term toxicities, while fostering adherence. Because these regimens may challenge current standards of care, clinicians must be aware of emerging clinical trial data and ready to incorporate them into practice. Clinicians must also be prepared to meet the clinical needs of patients classified heavily treatment-experienced (HTE), whom are often resistant to multiple classes of ART drugs, leaving few viable treatment options.

To address these clinical gaps, we developed, implemented, and evaluated the effectiveness of a live instructional webcast. It aimed to provide clinicians with in-depth perspectives on recent advances in HIV treatment and, specifically, therapeutic paradigms for both treatment-naïve and HTE patients that utilize two active drugs. Using a social-constructivist approach, the instructional design was an interactive, case-based program featuring real-world cases, discussed by national and international HIV thought leaders. Clinicians considered options for individualized treatment and chemoprophylaxis across patient types; in parallel, thought leaders provided evidence-based clinical trial results.

Participating clinicians mostly identify as pharmacists or physicians with infectious diseases or primary care specializations. Within-session learning was assessed for those who provided complete activity evaluations ($n = 24$). Learning scores were calculated by: (1) totaling correct responses across five pre- and post-test questions, (2) dividing by the total number of questions in each condition, and (3) multiplying each resulting value to derive a total pre- and post-test score percentage (i.e., measure of clinician knowledge prior to and after the education). A paired-samples t-test was used to compare pre- and post-test scores, which revealed a significant increase in knowledge for assessed advances in HIV treatment (pre-test: $M = 45.000$, $SD = 25.876$; post-test: $M = 80.830$, $SD = 17.173$; $t(23) = -6.659$, $p < .001$). Results suggest that our webcast had an effect on knowledge of therapeutic paradigms for both treatment-naïve and HTE patients that utilize two active drugs.

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EFFICACY AND ACCEPTABILITY OF AN INTERDISCIPLINARY CULINARY MEDICINE WORKSHOP FOR FAMILY AND INTERNAL MEDICINE RESIDENTS

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Introduction: Students at U.S. medical schools receive fewer than 20 hours of nutrition education, on average (Adams et al., 2010), which is of particular importance for primary care providers who manage conditions impacted by lifestyle. The purpose of culinary medicine is to incorporate nutrition and cooking into medicine to treat and prevent disease (LaPuma, 2016). While many medical schools, and some residency programs, have developed a full curriculum for trainees that is not feasible for all.

Method: The current project aimed to assess the efficacy and acceptability of a one-time interdisciplinary, culinary medicine workshop for 25 family and internal medicine residents in a low SES urban community. Residents engaged in a half-day workshop that included: introduction to culinary and lifestyle medicine, nutrition, hands-on preparation, communal meal and discussion of barriers, benefits, and behavioral strategies for healthy lifestyles.

Results: At baseline, participants reported moderate knowledge of nutrition ($M=5.72$, $SD=1.82$; 1=not at all and 10=completely), comfort providing general nutrition information to patients ($M=5.44$, $SD=1.68$) and to patients with specific health conditions (e.g., diabetes; $M=6.12$, $SD=1.52$). They also expressed little likelihood of providing a recipe to patients ($M=3.8$, $SD=1.52$) and little familiarity with community resources to address these needs ($M=3.96$, $SD=1.68$). Following the completion of the workshop, participants reported increased knowledge of nutrition, and increased likelihood of discussing home cooking, recipes, and community resources with patients. While these results are promising, paired-samples *t*-tests indicated no statistically significant changes in these measures, though this may be partially explained by small sample size. Participants provided anonymous open-ended feedback (analyzed using constant comparative analysis), which indicated the workshop was useful, relevant, and highly acceptable. Specific themes derived from this analysis will be discussed.

Conclusions: The current study demonstrated the acceptability of a one-time introductory culinary medicine workshop to primary-care based medical residents. While results indicated a one-time workshop was not sufficient to demonstrate statistically significant changes in clinical practice, these results are potentially meaningful clinically and educationally and indicate a need for further research.

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GENETIC AND ENVIRONMENTAL INFLUENCES ON POST-TRAUMATIC STRESS DISORDER SYMPTOMS AND DISINHIBITED EATING SYMPTOMS

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Post-traumatic stress disorder (PTSD) and eating disorders (ED) are often comorbid, yet mechanisms underlying this comorbidity are not well understood. Disinhibited eating behaviors and cognitive dietary restraint are key components of ED symptomatology and important to assess in relation to PTSD symptoms. Previous research has evaluated the heritability of PTSD symptoms, disinhibited eating, and cognitive dietary restraint individually, but no studies have evaluated the contribution of genetic influences to their covariance. Understanding genetic and environmental overlap may elucidate underlying biological mechanisms and potential treatment targets for those with comorbid PTSD and ED. We examined these relationships in a community sample of 400 twins (102 monozygotic pairs and 98 dizygotic pairs; $M_{age} = 29 \pm 12$ years; 63% female) from the Washington State Twin Registry who completed the PTSD Check List – Civilian Version (PCL-C) for PTSD symptoms and the Three-Factor Eating Questionnaire Revised 18-item version (TFEQ) for disinhibited eating and dietary restraint. We used biometric modeling to assess genetic and environmental contribution to the association between PTSD symptoms, disinhibited eating symptoms (uncontrolled eating, emotional eating), and dietary restraint. We estimated heritability for each of the domains as well as the degree of genetic overlap between PTSD symptoms and disinhibited eating domains. There were significant phenotypic correlations between PCL-C total score and TFEQ total score ($r=.32$), uncontrolled eating ($r=.31$), and emotional eating ($r=.29$) subscales, but not with the cognitive restraint subscale ($r=.08$). Heritability was estimated at 48% for PCL-C total score and 45% for TFEQ total score. TFEQ subscale heritabilities were estimated at 48% for dietary restraint, and 34% for both uncontrolled eating and emotional eating. There were significant genetic correlations between PCL-C total score and TFEQ total score ($r=.34$), and TFEQ uncontrolled eating ($r=.53$), but not with other TFEQ subscales. In the phenotypic correlation between PCL-C total score and uncontrolled eating, 69% was due to genetic effects. Together, findings reveal genetic overlap between PTSD symptoms and ED symptoms, especially uncontrolled eating. Shared genetic influences contribute to the phenotypic relationship between PTSD symptoms and disinhibited eating, but there is little relationship between PTSD symptoms and cognitive dietary restraint. A genetic link between PTSD and disinhibited eating highlights the need for additional research to examine the shared risk factors and biological mechanisms responsible for the co-occurrence of PTSD and ED symptoms and to further elucidate any relationship between PTSD and cognitive restraint. Future research and clinical efforts might focus on evaluating the utility of trauma-informed eating disorder treatments.

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US ONCOLOGISTS' REASONS FOR NOT USING NEXT GENERATION SEQUENCING

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Purpose: Next generation sequencing (NGS) may aid in treatment management based on molecular tumor characteristics. The objectives of this project was to evaluate organizational-, provider-, and patient/family- level factors associated with NGS use to guide patient care.

Methods: Using data from the National Cancer Institute's *National Survey of Precision Medicine in Cancer Treatment* (n=1,281), we evaluated the association between organizational-, provider-, and patient/family- level and NGS use. Modified Poisson regressions were used to estimate prevalence ratios and determine if multilevel factors were associated with NGS use to guide patient care in the past 12 months.

Results: "Testing not being relevant" was most frequently reported as "sometimes" or "often" a reason for not ordering multi-marker tumor panels (57%), followed by not enough evidence of the tests' utility (41%). More than half of oncologists cited difficulty obtaining sufficient tissue for testing (57%) and using tests for individual genes (72%) as "sometimes" or "often" a reason for not using multi-marker testing. On the patient/family level, 59% of oncologists reported at least one barrier to involving patients/families in decision-making about multi-marker tumor panel testing. While patient/family barriers were not significantly associated with NGS use, the unavailability of multi-marker panels in an oncologist's practice (adjusted prevalence ratio (aPR): 0.70, 95%CI: 0.61–0.81), lack of personnel resources to interpret results (aPR: 0.87, 95%CI: 0.76–0.99), and insufficient time to order tests or review results (aPR: 1.10, 95%CI: 1.02–1.18) were associated with lower NGS use. Those reporting these barriers tended to have fewer genomic resources in their practice, to be in rural or suburban areas, and to have a higher proportion of Medicaid patients.

Conclusion: Modifiable, organizational factors were associated with low NGS use. Receipt of genomics training as well as organizational policies related to the use of genomics were associated with lower reporting of barriers to NGS use, pointing to potential targets for future studies aimed at increasing NGS testing for cancer treatment.

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PROMOTING COMMUNITY SUICIDE PREVENTION INTERVENTION THROUGH AN ONLINE BYSTANDER INTERVENTION MODEL-INFORMED TOOL: AN RCT

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Background: The World Health Organisation has declared suicide a global epidemic and public health priority. Previous research advocates for more innovative technology-based suicide prevention campaigns (e.g., online training modules) that target the community as opposed to professionals only. Emerging evidence suggests addressing the Bystander Effect through the Bystander Intervention Model (BIM) in education material may have potential for suicide prevention. The current study is the first known investigation of this model in the field of suicide prevention.

Method/Design: A sample of 281 adults recruited from the general community participated in a randomised controlled trial comprising a standard factsheet about suicide and mental health (control), and a factsheet designed according to the BIM (experimental group). Their self-reported suicide risk detection and response readiness, confidence and intent when presented with a suicidal peer was tested just prior to and post-intervention and compared across time and between groups.

Results: Results showed the intervention group had significantly higher ($p < 0.01$) levels of suicide risk detection and response readiness, confidence and intent than the control group post-intervention.

Conclusion: This study indicated that BIM-informed suicide risk training material may have potential to improve readiness, confidence and intent, and therefore enhance suicide prevention. Further testing in this area is recommended as, while results were statistically significant with moderate-to-large effect sizes, clinical significance requires further exploration. Larger and more diverse contexts will determine the extent of this finding.

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PREVENTING PROVIDER MISINFORMATION AND IMPROVING OVERSIGHT OF ABUSE-DETERRENT OPIOID FORMULATIONS: A POLICY ANALYSIS

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America's opioid epidemic resulted from a confluence of events, including the Food and Drug Administration's (FDA) mislabeling of Oxycodone® as a "less addictive opioid" in 1995 and the American Pain Association's declaration that physicians should address pain as the "fifth vital sign" (deShazo, Johnson, Eriator, & Rodenmeyer, 2018). Pharmaceutical developers have pledged to increase the safety and transparency of opioid products by investing in the development of abuse-deterrent opioid formulations (ADFs). The Food and Drug Administration (FDA) has rewarded such efforts by expediting the review and process for drugmakers seeking the ADF label.

The FDA hails ADFs as "a step toward products that may help reduce abuse"; yet, the agency concedes that these drugs are not "abuse- or addiction-proof" (FDA, 2019). The FDA's guidelines for ADF evaluation and labeling acknowledge that the science of abuse deterrence is nascent, and clinical, analytical, and statistical methods for testing ADF products are rapidly evolving. Recent data suggests the introduction of ADFs to the medical market has shifted drug use trends in a deadly direction (Cicero, Ellis, & Surratt, 2012).

Furthermore, few health care providers are receiving accurate information regarding the inherent risks and limitations of ADFs. Nearly half of all prescribing physicians erroneously believe the ADF label signifies enhanced drug safety (Hwang, Turner, Kruszewski, Kolodny, and Alexander, 2016). The FDA's privileging of ADF therapies also undermines a holistic, multimodal approach to combating the opioid crisis.

This analysis seeks to address the problematic nature of expediting the approval of understudied ADFs by identifying structural solutions and protective measures that will prevent provider misinformation and opioid overreliance. The analysis isolates two structural inadequacies as root causes of provider overconfidence in and misinformation about ADFs, including the expedient nature of the FDA review process and the elective, often neglected, nature of provider education for new-to-market ADFs.

Proposed structural solutions include 1) formal research to understand how providers become misinformed or overly confident in the abuse-deterrent capacities implied by the ADF label and terminologies 2) incentivizing opioid prescription education for early-adopter providers who commonly prescribe opioid analgesics, and 3) mandate that pharmaceutical companies receiving the expedited ADF label for a product conduct more rigorous evaluation of the Risk Education Mitigation Strategies (REMS) program.

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NEWS COVERAGE VERSUS SPONSORED ONLINE PROMOTION AS PROMPT FOR PATIENT CONSIDERATION OF ASPIRIN, HEART HEALTH, AND STROKE

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Most patients in the United States live amidst a bounty of health information that includes an array of posts, stories, and advertisements from many different sources. In the case of patient consideration of using aspirin to lower risk of heart attack and stroke, previous research suggests one type of information – targeted online promotion such as purchased advertisements on search platforms – clearly can attract attention to and engagement with decision tools to encourage patient-physician discussion. Online advertising campaigns, however, also operate in an information environment that includes forces such as news coverage that might encourage patients to search for and find other information not directly crafted by campaign staff. Using time series analysis of weekly data from September 2014 through December 2018, we investigated the predictive ability of weekly newswire coverage about aspirin and heart health, e.g., Associated Press stories, to explain two distinct outcomes: number of patient engagements with an online tool and the relative search volume for "aspirin" and "heart" in Minnesota. We analyzed newswire mentions as a predictor over and above the predictive ability of sponsored online promotion (i.e., campaign advertising expenditures with Google, Yahoo, Facebook, and Twitter) for the two main outcomes (tool engagement and search). We coded major newswire stories mentioning "aspirin" and heart (achieving Krippendorff's alpha of .80 or higher for all coded variables) and queried Google Trends for searches from Minnesota on "aspirin" and "heart." As expected, weekly patient engagement with the campaign online tool was a function of online campaign promotion expenditure, $p < .01$, as well as the newswire appearance of a story on aspirin and heart with a Minnesota byline in a given week, $p = .04$, but tool engagement was not a function of weekly newswire story count for references to research on aspirin and heart health generally, ARIMA (1, 0, 0), $R^2 = .76$. Minnesota-based searches for aspirin and heart as key words (via Google), in contrast, were not a function of online campaign promotion but were a function of weekly newswire story count for references to aspirin and heart health research, $p = .03$, ARIMA (0, 0, 0), $R^2 = .03$. The separate spheres of influence for aspirin-related news stories and online campaign promotion is noteworthy, in part because such news stories have not universally championed aspirin use: although 64% of stories mentioning aspirin and heart refer to empirical research, 21% of those stories mention research finding no effect of aspirin on heart health or a negative effect and 32% of those stories mention aspirin side effects. Health news matters as a rival force in encouraging patient searches. Although online promotion can attract patients to targeted information, practitioners should monitor news stories for sources of influence on patient information seeking.

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BARRIERS TO ACCESSING ONLINE MEDICAL RECORDS IN THE U.S.: RESULTS FROM HINTS 2017–2018

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Patients' access to and use of online medical records (OMRs) can facilitate better management of their healthcare needs; however emerging disparities in OMR access and use persist.

This study aims to: 1) determine the prevalence of and predictors to individuals being offered OMR access; 2) determine the sociodemographic and healthcare predictors of individuals accessing their OMR; and 3) identify common barriers cited for not accessing one's OMR. Multivariable logistic regression models examined predictors of being offered, accessing, and cited barriers to accessing OMRs.

This is a secondary analysis of cross-sectional data from Health Information National Trends Survey 5 (HINTS 5) Cycle 1 (2017) and Cycle 2 (2018) (n=6,670). Multivariable logistic regression analyses were used to determine the association among standard sociodemographic variables (e.g. gender, age, race/ethnicity, etc.) and healthcare-related variables (e.g. health insurance status, frequency of provider visit, etc.) on being offered OMR, accessing OMR, and reasons for not accessing OMR in separate models.

In 2017–2018, 54% of U.S. adults reported have been offered OMRs, and among those offered, 57% reported accessed their records in the last year. Those who were less likely to access their OMRs included individuals with lower education, lower household income, living in rural areas, and non-internet users. The previous characteristics, along with racial/ethnic minorities and the uninsured were also less likely to report being offered OMRs. Among the 43% of U.S. adults who did not access their records, the top reasons for not accessing included: preference to speak to their provider directly, perceived lack of need, concerns about privacy or security, and having no way to access the website. Respondents who were more likely to cite that they preferred to speak to a provider directly as a reason for not accessing OMRs included those who visited a provider in the past year and those with chronic conditions.

Disparities in OMR access remain in the US and continue to be a critical challenge. Sociodemographic, internet use, and healthcare factors are associated with variation in being offered access and actual use of OMRs. In addition, the most common reason cited for not accessing one's OMR was the preference to speak to a provider directly. To realize the values of OMR use for patients, it is important to ensure OMR does not replace the importance of interpersonal patient-provider relationship and communication, and to further integrate OMR into clinical care.

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INFORMATION PROCESSING OF CANCER MESSAGES ON SOCIAL MEDIA: A MIXED METHODS EYE TRACKING STUDY

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While social media has facilitated the sharing of health information, these platforms have increased the risk for users to be exposed to and affected by health-related misinformation. It is critical to understand factors, such as message features and user characteristics, associated with how people process and evaluate information on social media. Such endeavors can then inform ways to disseminate accurate health messages and mitigate the spread of misinformation.

Using data from an experimental eye-tracking study on simulated cancer Facebook posts, this study examines the association between message source, format, accuracy and users' health literacy on time spent on posts. Participants (n=53) were asked to view simulated Facebook posts about HPV vaccination and sunscreen. Message conditions varied by source (government agency, healthcare organization, or lay individual), format (narrative vs. non-narrative information), and veracity (credible vs. non-credible message). Participants then responded to a survey to assess message believability of posts. Message accuracy was dichotomized into low and high accuracy by message veracity and believability. A Bayesian hierarchical model was conducted to analyze the role of health literacy on accuracy assessment and dwell time across conditions.

Overall, health literacy did not predict accuracy nor dwell time. However, further looking into dwell time by conditions and controlling for pixel size, participant order, and health topic, participants spent 4.43 more seconds viewing narrative posts than non-narrative posts, 95% HDI [1.8, 7.22]. This result was qualified by a 3-way interaction between participant message accuracy, format, and source. Participants whose accuracy assessment was high, spent more time on narrative posts than non-narrative posts, regardless of source. Participants with low accuracy assessment looked at government and individual narratives 7.35 seconds longer than non-narratives, 95% HDI [2.62, 12.4], but spent only 0.03 seconds more on health organizations narratives than non-narrative posts, 95% HDI [-3.39, 3.57].

When designing social media messages for health promotion, message format (e.g. narrative vs. non-narrative) can affect information processing. Our results showed that individuals spend more time on narratives than non-narrative messages. Although individuals' health literacy did not predict dwell time on post, findings suggested participants with low accuracy assessment spent more time scrutinizing narrative posts. Future public health interventions should ensure health promotion messages disseminate accurate and believable information. In an effort to mitigate the effect of misinformation, health literacy interventions can help individuals determine accuracy of information on social media.

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SOCIAL AND BEHAVIORAL DRIVERS OF REPORTING DEATHS TO A NATIONAL CALL CENTER IN SIERRA LEONE AFTER THE END OF AN EBOLA OUTBREAK

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Background: An outbreak of Ebola Virus Disease (Ebola) was detected in Kailahun district in the Eastern region of Sierra Leone in May 2014, while the largest number of confirmed Ebola cases and deaths were recorded in the North and West. The Government of Sierra Leone repurposed a national toll-free line (1-1-7 system) in August 2014, and mandated its use to report all sick persons and deaths. Reporting to the 1-1-7 system continued but sharply declined after the outbreak ended. Reasons for the decline were not understood as well as motivations to continue reporting. Flare-up of new Ebola cases after the end of an outbreak is possible and occurred in Sierra Leone, mainly because of the risk posed by sexual transmission due to viral persistence of the Ebolavirus in the semen of survivors. Reporting and screening of deaths help to detect re-emergence of Ebola. This assessment aimed to examine social and behavioral drivers of reporting deaths in a post-Ebola outbreak setting in order to inform risk communication efforts to improve routine death reporting.

Methods: A telephone survey was conducted with a national random sample of 1291 respondents who reported a death to the 1-1-7 system a year after the last flare-up of Ebola ended in Sierra Leone. Pearson Chi-square test was first used to examine differences in motivations and concerns across geographic regions. Secondly, differences in motivations and concerns were examined by past experience of personally knowing someone who died of Ebola.

Results: Motivations and concerns related to death reporting significantly varied across geographic regions. Wanting to find out the cause of the death was less frequently cited as a motivation among respondents in the West (17%) compared to those in other regions (36%–47%). However, motivation to obtain a burial permit was significantly higher in the West (44%) compared to other regions (20%–29%). Motivation to prevent possible infections was higher in the North (42%) compared to other regions (17%–18%). Expressing a concern about the consequences if the death turned out to be Ebola was higher in the North (39%) compared to other regions (14%–32). Overall, of those who were concerned about the consequences if the death turned out to be Ebola, significantly more of them (59%) knew someone who died of Ebola compared to those that did not (41%). Among those who were motivated to report the death to prevent possible infections, significantly more of them (54%) knew someone who died of Ebola compared to those that did not (46%).

Conclusions: Motivations and concerns associated with death reporting largely varied across geographic regions in Sierra Leone following the end of the Ebola outbreak, and may have been influenced by the past experience of knowing someone who died of Ebola during the outbreak. Risk communication to improve death reporting should be regionally targeted and address the concerns of families and their communities.

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KNOWLEDGE AND SUPPORT FOR INDOOR TANNING LAWS AMONG MOTHERS AND TEEN DAUGHTERS IN 34 STATES IN A RANDOMIZED TRIAL

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Indoor tanning (IT) is associated with elevated risk for melanoma. Several states restrict IT by age and/or require parental permission for adolescents to use IT facilities. Mothers' knowledge of state laws may reduce their permissiveness for daughters to indoor tan. In a randomized trial testing a social media campaign to prevent IT by adolescent girls, mothers (n=777) were recruited from 34 states that do not ban IT under age 18 (9 have no restrictions; 3 have age restrictions; 9 require parental permission; and 16 have both). Mothers' knowledge of their states' IT laws was collected at baseline. Responses to the 12-month posttest by control group mothers estimated support for IT policies without our IT prevention intervention. Daughters were invited to complete a survey at baseline (n=441), but were not required to do so for mothers to enroll. Between December 1, 2017 and March 31, 2018, 17.8% of mothers (M=1.3 sessions, SD=5.0) and 11.5% of daughters (M=0.7, SD=3.2) reported at least one IT session. A minority of mothers accurately reported whether their state has an age restriction (18.5%) or requires parental permission (19.1%). Of these mothers, few correctly knew the age of restriction (22.9%) or when parental permission was required (31.2%). Most did not know these aspects of state IT laws (68.7% and 70.7%, respectively). Few daughters accurately reported their state restricted IT (14.1%) and at what the age (13.5%). Most daughters were not knowledgeable (11.6% answered incorrectly) or uncertain (74.3% responded "I Don't Know") of the law. Over half of mothers (58.9%) said IT should be banned for children under age 18 and would vote for a candidate who supported a ban (57.3%). Also, several mothers would sign a petition (66.8%) or create/share an online petition for a ban (35.4%); write (34.2%), call (31.3%) or speak with (29.8%) an elected state representative about supporting a ban; or testify to a state legislative committee (20.9%) supporting a ban. Mothers reporting IT were more aware of parental permission requirements (tanned: 49.3%, not tanned: 30.8%, p<0.001) but not age bans (tanned: 40.6%, not tanned: 37.8%, p=0.536), and had less support for a ban under 18 (tanned: 41.6%, not tanned: 65.4%, p<0.001). State policy solutions are a first step. Efforts to inform mothers and daughters may be needed to create a norm against IT, to prevent moms from permitting IT by daughters, and to build support for further restrictions on minors' access.

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RESPONSIBILITY FOR HEALTH PROMOTION AND CARE COORDINATION IN URGENT CARE: PATIENT AND PROVIDER PERSPECTIVES

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As patients increasingly seek care in urgent care (UC) settings, we must consider the role of UC providers in health promotion and communication with primary care physicians (PCPs) and other providers. This study examined the perspectives of UC patients and providers on care coordination and responsibility for health promotion.

We surveyed 69 providers working in a large UC network based in the southern United States (33.3% male, mean age=43.6, SD=9.28, 42% nurse practitioners, 33.3% physicians assistants, 21.7% physicians). An additional online survey of 402 patients who reported visiting UC within the past year (52.7% male, modal age 25–34) assessed if they intended to share the visit to UC with their PCP or other providers, preferences for visiting UC over other providers, and whether they would rather discuss medical issues with UC or other providers.

58% of UC providers agreed that providers working in UC settings should be responsible for communicating or coordinating care with a patient's PCP or other providers. 72% believed that UC providers should be responsible for discussing health promotion and disease prevention with their patients. UC providers who reported greater symptoms of depersonalization and emotional exhaustion and less personal accomplishment on the Maslach Burnout Inventory were significantly less likely to support UC providers taking on these responsibilities.

78% of UC providers perceived that patients share what happens at their urgent care visit with their PCP or other healthcare provider. However, 45% of UC patients said they did not intend to share and 55% said they would visit UC again without first contacting their PCP or another provider. Older patients and those with a usual source of care were significantly more likely to report intending to share their UC visit with their other providers. A sizeable proportion of patients reported they would prefer to visit UC over other providers (33%) and would prefer to discuss their medical concerns with UC providers as compared to other providers (21%).

Burnout may play a role in UC providers' perspectives on health promotion and care coordination. UC providers may be overestimating their patients' intentions to communicate about their UC visit with their PCP or other providers. Best practices for health promotion and care coordination should be established as the UC model of healthcare delivery continues to grow.

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HEALTH LITERACY IN MULTI-MORBIDITY – LATENT PROFILE AND NETWORK ANALYSES TO IDENTIFY THE BEST TARGETS FOR INTERVENTIONS

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Aims: Health literacy (HL) represents extent to which people can access and understand health information and communicate their health needs to service providers. Although health literacy interventions should target particular health literacy strengths and difficulties of local communities, limited research has examined which groups of individuals or which domains of health literacy might be suitable targets for these interventions. To address these questions, the present study examined health literacy profiles and networks of health literacy skills in multi-morbid patients with co-existing diabetes and end-stage renal disease.

Methods: A total of 221 patients completed the Health Literacy Questionnaire (comprising 9 domains to measure district HL skills), the Beck Hopelessness Inventory and Hospital Anxiety and Depression Scale. Treatment adherence was measured with self report and concurrently assessed biochemical markers, i.e., HbA1c, phosphate and potassium levels and inter-dialytic weight gains. R package qgraph were used to identify profiles and networks of HL Skills.

Results: Latent Profile Analysis identified three distinct HL profiles: low (16%), moderate (63%) and high (21%). Low HL was associated with Chinese ethnicity, lower education, hopelessness, anxiety and depression. Adherence markers were not consistently associated with HL profiles - only non adherence to medication was associated with low HL profile. Network Analysis identified "ability to find information" (CS= 1.12; ZCS= 1.14), "ability to engage with providers" (CS= 1.05; ZCS= 0.84) and "health-system navigation" (CS= 1.00; ZCS= 0.61) as the most central domains in HL whose activation is likely to activate other domains/skills.

Conclusions: This is the first study to conduct both LPA and NA on the domains of health literacy in a sample of patients with DM-ESRD. Analyses suggest that parents of Chinese Ancestry and individuals with lower education might benefit from health literacy interventions, and that these interventions should target the ability to find good health information, the ability to actively engage with healthcare providers, navigating the healthcare system and social support for health. Targeting these domains might make interventions more cost-effective.

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OPTIMIZING VISUAL DEPICTIONS OF RISK IN THE CONTEXT OF LUNG CANCER SCREENING: A MIXED METHODS APPROACH

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Background: Guidelines call for the use of risk-based algorithms and decision-support to aid shared decision-making about computed tomography (CT) lung screening. Given the complexities of identifying CT lung screening candidates, prior work on visual risk depictions offer little guidance on how to convey risk information to those eligible for screening. The Risk-based NLST Outcomes Tool is an online tool that provides personalized risk estimates of lung cancer death and diagnosis with and without screening, and risk of receiving a false positive with screening. To determine the most effective visual risk depiction format to relay personalized risk information to current and former smokers, we used a mixed methods approach to test four distinct presentations of icon arrays via interview, eye-tracking and survey methodologies.

Method: Current or former smokers (N=12) were randomized to view an icon array depicting the impact of screening on the risks of lung cancer death and diagnosis in 1 of 3 ways: 1) separate square-shaped icons depicting risks with and without screening (n=4), 2) separate person-shaped icons (n=4) depicting risks with and without screening, 3) a single square icon array depicting incremental risk with and without screening (n=4). All participants saw condition 4) visual area-manipulated person icon array depicting incremental risk with and without screening.

Results: Participants were primarily Black (83%), female (67%), current smokers (67%), had an average of 34.9 pack-years ($SD=6.76$), 58 years ($SD=4.96$), completed some college or more (58%) or high school or trade school (42%). Interview and eye-tracking data suggest participants preferred person icons to square icons and separate with and without screening estimates to incremental risk estimates. Although some participants indicated preference for the visual area manipulation area in condition 4, interview and survey data show this condition elicited inaccurate risk perceptions. Overall, participants were surprised by the high false positive rate and expressed interest in more information about the screening process, especially regarding false positives.

Conclusion: Results highlight the importance of design choices on how visual risk estimates are construed and interpreted in the context of lung screening. Meaningful differences across 4 types of icon array visual risk depictions are described in terms of conveying risk, preferences, affective reactions and trustworthiness.

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CLASSIFYING AND UNDERSTANDING FLU VACCINE MISINFORMATION ON TWITTER

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Social media have enabled and accelerated the creation and spread of misinformation on a global level. Misinformation is defined as false information judged by expert consensus contemporaneous with the time period. Exposure to vaccine misinformation has been linked to the formation of false beliefs and the recent upsurge of disease outbreaks. This study developed an automatic machine learning algorithm to classify vaccine misinformation and analyzed semantic structures of classified tweets.

In this study, we focused on examining messages about flu vaccines posted on Twitter during the peak of 2018 flu season, we collected a sample of 120,379 original tweets (excluding retweets and quotes) from January 1st to February 11th 2018, using keywords specifying “flu” or “influenza” and “shot” or “vaccine,” “vaccination,” “vax,” “immunization,” “immunization,” with Twitter’s Premium API. Then we built a fact-checking classifier to automatically distinguish misinformation from non-misinformation. Lastly, we conducted semantic network analyses to pinpoint the different semantic structures of misinformation tweets and non-misinformation tweets.

To build the machine-learning classifier, we first conducted human annotations on a subset of randomly selected 1,235 tweets. Two pairs of two coders annotated half of the tweets. All pairwise inter-coder reliabilities reached the criterion of Cronbach’s alpha of 0.7. The discrepancies were resolved. Based on coded labels we built a machine-learning model to predict whether a tweet contained misinformation or not. The multi-layer perceptron (MLP) classifier achieved a F1-score of 91.1% on the sample tweets. We then applied the finalized predictor to the rest of the tweets and classified 7,814 misinformation tweets (8.6%) and 82,576 non-misinformation tweets (91.4%).

To understand the differences in semantic structures of the misinformation and non-misinformation tweets, we performed semantic network analyses separately on the misinformation tweets and the non-misinformation tweets with ConText for preprocessing, network construction Gephi for network visualization. Modularity analysis was conducted to determine sub-clusters within the networks. We found in the network of misinformation tweets, the most central words were *flu*, *vaccine*, *not*, *get*, and *death*. Whereas in the accurate tweets, the most central words were *flu*, *vaccine*, *not*, *get*, and *health*. In brief, the misinformation networks centered on conspiracies about government, media scam, and citing Trump.

Developing automatic approaches to identify misinformation will make a significant contribution to improve the social media environment and if employed, may benefit individual decisions. The insights of our study can inform tailored misinformation correction and vaccine promotion strategies on social media to improve vaccine discussions and vaccine coverage.

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BODY IMAGE AND DISORDERED EATING DIFFERENCES AMONG RACIAL AND SEXUAL MINORITY WOMEN

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Research suggests White women have more body image concerns and dissatisfaction than Black women, and there are limited studies examining racial differences in eating pathology with mixed findings. Findings are also equivocal regarding body image concerns and disordered eating behaviors among sexual minority women (SMW), with some studies detecting differences between SMW and heterosexual women and others finding none. However, there is limited research in this area investigating the intersectionality of race and sexual minority status. Thus, the aim of the present study was to explore differences in body image and disordered eating behaviors among Black and White heterosexual, lesbian, and bisexual women. Participants were 990 college women (471 Black, 519 White) identifying as heterosexual ($n=885$), lesbian ($n=53$), or bisexual ($n=52$). Participants completed surveys about body dissatisfaction (Body Shape Questionnaire [BSQ-16]) and body checking (Body Checking Questionnaire-Shortened [BCQ]). Disordered eating thoughts and behaviors were measured using the Eating Disorders Examination-Questionnaire (EDE-Q) and dichotomous (yes/no) items asking about past month overeating and loss of control of eating. Consistent with previous literature, results of a 2 (Race: Black, White) x 3 (Sexual Orientation: Heterosexual, Lesbian, Bisexual) factorial ANOVA indicated a small main effect for race on the BSQ ($p=.034$), suggesting White women reported more body dissatisfaction than Black women. No other main effects or interaction effects were found for the BCQ or EDE-Q. Chi-square analyses were conducted for the dichotomous overeating and loss of control of eating variables. Results indicated a significant effect for loss of control ($p=.019$), and follow-up analyses revealed White bisexual women have higher rates of loss of control of eating than Black bisexual women (42.3% vs. 7.7%). The present study provides initial evidence that differing patterns in body image and disordered eating may exist for those belonging to multiple minority groups. Future research considering intersecting identities for body image and disordered eating behaviors with larger samples and more diverse participants (e.g., Latina women, other sexual identities) is warranted. Such research is critically important because it may inform the need for culturally tailored interventions for eating disorders or related conditions (e.g., obesity) for minority groups.

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“TAKE CARE OF THOSE SICK PEOPLE...I’M FINE.”: A QUALITATIVE STUDY OF ATTITUDES TOWARD RESEARCH PARTICIPATION AMONG LATINX ADULTS

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Members of racial and ethnic minority communities are considerably underrepresented in biomedical research. African American and Latinx individuals represent 30% of the U.S. population, but make up only 6% of research participants in clinical and biomedical research. Although many research programs are committed to including communities that historically have been underrepresented it remains unclear whether these efforts will address the root causes of minority underrepresentation. To better understand why Latinx adults may be hesitant or decline to participate in biomedical research and how professionals understand and address this problem, we conducted 25 in-depth interviews with Latinx community members recruited from a safety net clinic in Santa Ana, California and 30 interviews with medical and research professionals involved in health disparities research. Among the community interviews with Latinx adults (18 to 72 years old), 15 of the interviews were conducted in English (9 women, 6 men) and 10 were conducted in Spanish (8 women, 2 men). We asked open-ended questions on perceptions of biomedical research, health care experiences and barriers to receiving care. Our results are drawn from open and focused qualitative coding of the interview transcripts. We found that participants often viewed biomedical research using an illness mindset, reflecting on preexisting or acute health issues and basing participation on whether the study might alleviate these problems. Additionally, when asked directly about participating in research, participants often expressed reluctance and strong feelings of mistrust in medical professionals from prior research or health care experiences. Examining the 30 interviews with professionals (17 women, 13 men) perspectives fell into two camps: Some suggested that minority underrepresentation was a top-down problem that required more institutional pressure and regulations, while others proposed a bottom-up approach arguing that community based participatory research methods inherently address barriers that typically make research within minority communities challenging. Our findings suggest that successful biomedical recruitment within clinic settings may be complicated by the fact that people are often seeking immediate help for an acute illness but are being asked to think more generally about health promotion and participate in research that may have delayed or very diffuse benefits. Structural, cultural, and social barriers to minority participation in biomedical research may be better understood and addressed through community engagement processes focused on preventative health education and engendering trust through open communication and community-researcher collaborations.

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STIGMA, GENDER, AND SOCIAL TIES: VIRAL NON-SUPPRESSION AMONG PATIENTS IN HPTN 065 AND INTERVENTION IMPLICATIONS

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Background: The HIV Care Continuum includes progression from diagnosis to sustained viral suppression, although minority populations experience challenges in navigating this continuum. Barriers have included poor quality of care, particularly among women, African Americans, and men who have sex with men (MSM).

Methods: HPTN 065 evaluated the role of financial incentives in viral suppression among adults enrolled at HIV clinics in NY and DC; baseline data from the Prevention for Positives component were analyzed. The outcome of interest was viral non-suppression (>40 copies/mL). Key variables included medication adherence attitudes, social support and stigma, which were selected based on insights from qualitative analyses with a sub-study of HPTN 065 exit interview participants. Descriptive statistics were calculated. Logistic regression with robust standard errors was implemented and stratified by sex.

Results: Participants (N=745) were predominantly male (68.8%), African American (61.9%), with 64.3% with under \$40,000 annual income. Men were more likely to identify same-sex partners (38.5% vs. 5.4%), and less likely to report yearly income $< \$10,000$ (22.5% vs. 41.3%) than women. In adjusted analyses, MSM had 1.7 times odds of non-suppression as non-MSM (Adjusted Odds Ratio [AOR] = 1.71; 95% Confidence Interval [95% CI] = 1.00, 2.92; $p < .05$; N=535). Men with more positive medication adherence attitudes had 62% lower odds of non-suppression than men with less positive attitudes (AOR=0.37; 95% CI=0.13, 1.00; $p < .05$). Women more open about their HIV status had greater odds of non-suppression than women less open ($p < .08$). Finally, women with multiple barriers to medication adherence had over 3-fold the odds of non-suppression as women who identified no barriers (AOR: 3.31; 95% CI=1.13, 9.73; $p < .05$).

Discussion: Associations between socio-demographics, medication adherence attitudes, and viral load non-suppression differed by sex. Irrespective of sex, presence of social support and less experiences of stigma did not appear protective against non-suppression. More research is needed to better understand and address barriers to achieving and maintaining viral suppression, particularly among MSM and women, who continue experiencing inequities in positive HIV health outcomes.

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STRESS AND LEVELS OF DISCLOSURE: DIFFERENTIAL RELATIONSHIPS BY GENDER THROUGH A PERSON-CENTERED LONGITUDINAL PERSPECTIVE

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Background: Previous studies have documented an inconsistent relationship between stress and HIV disclosure among people living with HIV (PLWH), and mostly used a cross-sectional design. Little is known about levels of HIV disclosure and their relationships with stress from longitudinal perspective. Therefore, this study explored different levels of HIV disclosure and examined whether stress could predict disclosure levels among PLWH. This study also investigated the potential gender difference in the relationship between stress and disclosure levels.

Methods: Data were derived from a prospective cohort study conducted from November 2016 to January 2018 in Guangxi, China. Four hundred forty-four PLWH were recruited. Participants were assessed on perceived stress at baseline, sociodemographic characteristics, and their numbers of HIV disclosure targets at baseline, 6-month, and 12-month follow-ups. Person-centered approach (i.e., growth mixture modeling) was used to characterize the levels of disclosure based on numbers of disclosure targets. Multinomial logistic regression was used to predict levels of disclosure with baseline stress after adjusting for covariates. The interaction effect of stress by gender was examined.

Results: Three levels of HIV disclosure were characterized using mean number of disclosure targets at each time point. Level one ("low levels of disclosure") contained 81.2% of the individuals while 6.4% for level two ("increased levels of disclosure") and 12.4% for level three ("high levels of disclosure"). Compared to PLWH in level one, PLWH in level two with higher level of education ($std.\beta=0.34$, $OR=3.39$ [1.27~9.07]) are more likely to increase their levels of HIV disclosure over time. PLWH who were young ($std.\beta=-0.19$, $OR=0.96$ [0.93~1.00]), married/cohabitated ($std.\beta=-0.20$, $OR=0.40$ [0.20~0.79]), and perceived stress ($std.\beta=0.41$, $OR=1.13$ [1.00~1.28]) were inclined to have high levels of disclosure from baseline to follow-ups ("level three"). The interaction of baseline stress by gender was statistically significant in differentiating levels one from three ($std.\beta=-0.17$, $OR=0.84$ [0.73~0.96]) while it was not significant between levels one and two ($std.\beta=-0.02$, $OR=0.99$ [0.85~1.16]). Compared to male counterparts, female PLWH with high levels of baseline stress were more likely to have consistent high levels of HIV disclosure over time.

Conclusions: High levels of education was positively associated with increased levels of disclosure over time, and young, married/cohabited female with high levels of baseline stress have consistent high levels of disclosure over time. To increase disclosure, structural interventions are needed to promote health education of HIV and disclosure at both community and clinical settings, and tailored individual-based interventions are needed to improve disclosure skills and stress management among PLWH.

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SEX DIFFERENCES IN THE PSYCHOLOGICAL AND ENVIRONMENTAL CORRELATES OF INJECTION RISK AMONG PEOPLE WHO INJECT DRUGS IN MEXICO

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Background: HIV and HCV transmission among people who inject drugs (PWID) is often fueled by injection risk behaviors (e.g., injection equipment sharing), which are shaped by the dynamic interaction between personal and environmental-level factors.

Purpose: We utilized the social ecological model and studied PWID in Tijuana, Mexico to identify potential sex differences in the psychological and environmental correlates of injection risk, hypothesizing that females would face greater barriers to practicing injection risk reduction compared to males.

Methods: From 2011–2013, 734 PWID (female: 277, male: 457) were enrolled into a prospective cohort study in Tijuana. At baseline, participants completed interviews on injection and sexual risks. Utilizing baseline data, we conducted multiple generalized linear models stratified by sex to identify personal and environmental factors associated with injection risk scores. Injection risk scores ranging from 1–5 were calculated by averaging responses from five likert-scaled injection risk indicators (e.g., syringe sharing), with higher scores representing higher risk.

Results: For both sexes, difficult access to sterile syringes was associated with elevated injection risk scores ($b=1.24$, 95% confidence interval [CI]=1.16–1.33), using syringes from a safe source (e.g., needle exchange program) was associated with lower injection risk scores ($b=0.87$, 95% CI=0.82–0.94), and for every one-unit increase in safe injection self-efficacy we observed a 20% decrease in injection risk scores ($b=0.80$, 95% CI=0.76–0.84). Females had a higher median safe injection self-efficacy score compared to males (median=2.8, Interquartile range [IQR] =2.2–3.0 vs. median=2.8, IQR=2.0–3.0, $p=0.01$). Among females, incarceration ($b=1.22$, 95% CI=1.09–1.36), and police confiscation of syringes in the past six months ($b=1.16$, 95% CI=1.01–1.33), were associated with elevated injection risk scores. Among males, sex work ($b=1.16$, 95% CI=1.04–1.30), and polysubstance use in the past six months ($b=1.22$, 95% CI=1.13–1.31), were associated with elevated injection risk scores.

Conclusions: Interventions to reduce injection risk among PWID in Tijuana should be sex-specific, and address different levels of HIV and HCV risk. Prevention programs for females should address punitive policing practices and the criminalization of drug use. Interventions for males should consider the heterogeneity in drug use behaviors and promote safer sex work environments.

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FAMILY PLANNING AND HIV PREVENTION INTERVENTION NEEDS OF SOUTH AFRICAN ADOLESCENT GIRLS: CULTURAL CONSENSUS MODELING APPROACH

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Purpose: South African adolescent girls experience high rates of unintended pregnancies and STI/HIV. To inform the development of a culturally-tailored dual protection intervention emphasizing the prevention of *both* unintended pregnancies and STI/HIV, cultural consensus modeling (CCM) was employed. CCM is a methodology to determine shared cultural beliefs or norms using a four-phase mixed quantitative and qualitative methodology. The aim of this study was to qualitatively examine South African adolescent girls' pregnancy and HIV prevention intervention needs.

Methods: Participants were Sesotho-speaking South African adolescent girls aged 14 to 17 years ($N=25$; Mean age = 15.8) recruited from the Mangaung Metropolitan Municipality in the Free State Province. Participants were a subset of adolescents who previously participated in a quantitative data collection phase and who were identified as highly consistent with the prevailing cultural consensus model. Interviews focused on participants' perceptions of *other adolescent girls'* pregnancy and HIV prevention needs to elucidate shared cultural beliefs and norms rather than individual beliefs. Interviews were conducted in Sesotho, transcribed verbatim in Sesotho and translated into English. Two independent coders identified key themes in the data using a Grounded Theoretical approach with discrepancies resolved by a third coder.

Results: Results focused on themes related to intervention content and desired implementation setting. Participants identified limited overall exposure to pregnancy prevention information, with existing sexual health education content focused on HIV prevention and condom use. The importance of including content to address the role of peers as a key motivating factor for pregnancy and STI/HIV prevention method selection was emphasized. Participants preferred that sexual health interventions be delivered by trusted community organizations serving adolescents or via school-delivered programs. Participants also reported that there would be adolescent interest in assisting with the development of new sexual health interventions.

Discussion: Results point to the importance of cultural context for tailoring of dual protection intervention content among South African adolescent girls. There were identified gaps in information related to pregnancy prevention. In line with prevalent South African HIV prevention messaging (Abstinence, Be Faithful, and Condom Use: ABC), ABC prevention themes emerged along with an important role of peers. Interventions with a youth-focused format delivered within schools or via trusted community organizations were viewed as most acceptable. Development of culturally-sensitive dual protection intervention approaches incorporating study findings are urgently needed to address reproductive health disparities among South African adolescent girls.

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ADOPTION OF PRE-EXPOSURE PROPHYLAXIS: QUALITATIVE ANALYSIS OF THE PERSUASION STAGE OF DIFFUSION FOR AFRICAN AMERICAN YOUNG MSM

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Background: African-American MSM represent the population with the greatest risk of HIV infection in the US, yet adoption of pre-exposure prophylaxis (PrEP) among African-American MSM remains low. Applying Diffusion of Innovations (DOI) theory can aid in the identification of antecedents to PrEP adoption, with perceived characteristics of the innovation (i.e., PrEP) playing a key role in the persuasion stage of adoption decision-making. We apply DOI theory to examine qualitative data describing perceptions of PrEP among a sample of high-risk African-American young MSM (AAYMSM).

Methods: Qualitative data were collected from a sample of HIV-negative and HIV-status unknown AAYMSM (N=181; 17–24 yrs.; 67% ≤ high school education) via individual interviews. Open-ended questions asked broadly about participants' experiences with and thoughts about PrEP. Descriptive coding techniques were used to analyze data and identify perceptions of PrEP's key characteristics.

Results: Data revealed AAYMSM to be at three stages of PrEP diffusion: knowledge (PrEP-unaware; 11.6%), persuasion (aware but hadn't adopted; 72.4%), and adoption/discontinuance (current or prior use of PrEP; 16.0%). Men in the persuasion stage discussed characteristics of PrEP they had learned about through vicarious experience via media/social networks. Perceptions of PrEP's efficacy and side effects emerged as the most prominent among men in this stage. Many men in this stage perceived PrEP to be effective and beneficial, while others described uncertainty or negative perceptions of PrEP's efficacy. Perceptions of side effects were more mixed. Collectively, data regarding efficacy and side effects revealed three sub-strata of readiness to adopt PrEP for men in the persuasion stage – highly ready (n=40), moderately ready (n=20), and least ready (n=9). Other less frequently mentioned characteristics of PrEP included those related to its relative advantage (e.g., compared to condoms) and compatibility (e.g., low level of HIV risk).

Conclusions: Applying DOI theory revealed key perceptions of PrEP among men who are aware of the HIV prevention tool, but had not yet adopted it. Future research aimed at developing quantitative measures to examine stages of PrEP diffusion and related factors can help in identifying and mitigating important barriers to PrEP adoption among AAYMSM.

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SOMETIMES YOU GOTTA CHOOSE: INDEPTH QUALITATIVE ANALYSIS ON BARRIERS AND FACILITATORS TO PREP USE IN WOMEN WHO INJECT DRUGS

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Background: Women who inject drugs (WWIDs) are at risk for HIV as they may engage in needle sharing and survival sex work. Pre-exposure prophylaxis (PrEP) reduces the risk of HIV acquisition yet little is known about the barriers this population may have to use this prevention medication.

Objective: To understand WWID's conceptualization of barriers and facilitators to PrEP use to inform the development of a targeted PrEP intervention that would be carried out in a syringe exchange program that also offers social services.

Methods: Four focus groups (n= 24) with WWID clients of a large urban syringe exchange were audiorecorded and transcripts were analyzed by content analysis; codes were derived deductively from the moderator's guide and inductively through emergence until thematic saturation and refinement was achieved.

Results: All participants were HIV negative; 58% were white; average age 35.3. Over half had income of \$500 or less in the past month, 62.5% said they were homeless "most of the time". Of the total, 66% had heard of PrEP and 41.6% had tried it. Most participants indicated an interest in PrEP but noted that seeing a doctor was a significant barrier. Other barriers included homelessness and potential theft of medication. Plans to dispense PrEP on site at the syringe exchange was encouraged, as well as providing it on a daily basis and in pill packs because prescription bottles can be sold on the street or to small pharmacies, a disincentive to adhere to PrEP. An intervention embedded in the syringe exchange was noted as an important strategy to decrease medical mistrust.

Conclusions: Barriers to PrEP use are significant in vulnerable WWID populations. Interventions must decrease perceptual, informational, and structural barriers for WWIDs, including how best to integrate services in existing, trusted community locations.

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“A TARGET ON OUR BACKS”: EXPERIENCES OF PREP DECISION-MAKING AT AN LGBTQ YOUTH CENTER

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The conversation around HIV prevention underwent a dramatic shift following the FDA's 2012 approval of the prescription drug Truvada as a pre-exposure prophylactic (PrEP) for HIV infection. Early trials demonstrated that adherence to a daily dosage of the drug may effectively reduce the risk of HIV-1 infection by more than 90% (CDC, 2014). Despite these findings, the decision to begin a PrEP regimen is a complicated process, involving frank discussions of sexual practices with medical providers, healthcare costs associated with the prescription, a mandated quarterly HIV/STI evaluation, and personal beliefs on medicalization (Biello et al. 2016; Strauss et al., 2016). For young people, this complex decision may be one of their first interactions as legal adults within the healthcare system. Published research on PrEP has focused on factors before and after the decision-making process, including various populations' knowledge about the drug, cultural perspectives and stigmas around PrEP users, issues of adherence, and changes in sexual practices following uptake (Blumenthal et al., 2015; Dolezal et al., 2015; Rucinski et al., 2013; Strauss et al., 2016; Thrun, 2013). Little attention, however, has been paid to the actual experiences of individuals labeled “high-risk” as they make the decision whether or not to begin a PrEP regimen. This qualitative study examined the PrEP decision-making experience of visitors at a Long Island-based non-profit dedicated to serving LGBTQ youth in the New York Metro area. Three semi-structured focus groups were run with a total of 14 participants, the data from which was developed into themes using Braun and Clarke's guide for thematic analysis (Braun and Clarke, 2013). Participants were aged 19–26, and self-identified as African American (n=6), Latinx (n=4), or Caucasian/White (n=4). All participants identified as men who have sex with other men. The following four themes were developed from the research: The Impact of Being Targeted; Feeling Protected; Moving through Ambivalence; Communal Responsibility versus Personal Choices. This research was undertaken with the aim of developing recommendations for advocacy organizations and medical providers on how to best guide young, diverse populations towards healthy and confident medical decision-making, despite a political and sociocultural climate that frequently threatens their personal agency.

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“WALKING IN FAITH” - POSITIVE RELIGIOUS COPING ASSOCIATED WITH RESILIENCE FOR BLACK WOMEN LIVING WITH HIV AND HISTORIES OF TRAUMA

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Background: Black women in the U.S. account for over 60% of women living with HIV, a disproportionate burden linked to both structural (e.g. poverty) and psychosocial factors (e.g. stigma, trauma) that place Black women at increased risk. The HIV literature has historically focused on factors that place women with HIV at risk and less on factors that place them “at promise” for good psychological and physical outcomes. Religious coping has been noted as a particularly relevant and culturally congruent coping strategy within the Black community, and is therefore important to understand in relation to resilience factors, especially among Black women living with HIV (BWLWH). In the present study we investigated the cross-sectional associations between positive religious coping and resilience, post-traumatic growth, social support, generalized self-efficacy, and self-esteem among BWLWH and histories of trauma.

Methods: One hundred and nineteen BWLWH were enrolled and completed baseline assessment self-report measures for an intervention development study in the Southeastern U.S. Women completed measures on positive religious coping (Positive Religious Coping Subscale of the of the Brief RCOPE), resilience (i.e. Connor Davidson Resilience Scale), post-traumatic growth (i.e. Post-traumatic Growth Inventory), social support (i.e. Multidimensional Scale of Perceived Social Support), self-efficacy (i.e. Generalized Self-Efficacy Scale), and self-esteem (Rosenberg Self-Esteem Scale).

Results: Multivariate linear regressions controlling for age, education, and income showed that positive religious coping was significantly associated with higher resilience ($\beta=.663$, $p<.001$), post-traumatic growth ($\beta=.62$, $p<.001$), perceived social support overall score ($\beta=.21$, $p<.05$) and all three subscales (someone [$\beta=.34$, $p<.001$], family [$\beta=.65$, $p<.001$], friend [$\beta=.67$, $p<.001$]), generalized self-efficacy ($\beta=.77$, $p<.001$), and self-esteem ($\beta=.77$, $p<.001$).

Conclusion: For Black women living with HIV and histories of trauma it is essential to enhance our understanding of factors that may place this community at “promise” for good outcomes. Our findings highlight that positive religious coping is significantly associated with a wide-range of resilience factors. Therefore both research and interventions aimed at increasing resilience among Black women living with HIV need to consider and integrate positive religious coping.

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ASSESSING HEALTHCARE SETTING STIGMA IN CLINICS IN THE US SOUTH USING A MIXED METHODS APPROACH

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Background: Stigma in healthcare settings is a continuing barrier to HIV prevention and treatment in the United States (US) and is particularly urgent to address in the US South. We aimed to assess HIV-related and intersectional stigma, as well as effects of stigma on health outcomes, at HIV clinics in this priority region.

Methods: We conducted a mixed methods study with a convergent parallel design at seven HIV clinics in rural and urban settings in Alabama and Tennessee during 2018. For qualitative research, we conducted 14 focus groups, including a total of 56 healthcare workers and 44 people living with HIV (PLWH). Quantitative surveys were also completed by 192 healthcare workers and 762 PLWH at these sites. Qualitative data were analyzed using a thematic analysis approach, while quantitative analyses utilized ANOVA and logistic regression methods.

Results: Primary themes emerging from qualitative data around healthcare setting stigma related to understanding and changing stigma, coping with stigma, and intersecting stigmas (e.g., stigma due to sex, gender identity, Southern culture). Clients described experiencing stigma in healthcare settings, particularly negative interactions with healthcare workers. They also discussed anticipated stigma from other community members who may frequent the same healthcare settings, and described how this stigma negatively affected their engagement in HIV care. Quantitative analyses revealed that clinic workers differed significantly on a measure of observations of discrimination in their healthcare setting by occupation, with administrative and support staff reporting significantly higher discrimination than allied health and prevention staff ($F(3, 188)=3.91, p=.01$). Clients reported higher perceptions of discrimination in healthcare settings relative to that reported by healthcare workers, and higher perceptions of discrimination were related to greater likelihood of suboptimal antiretroviral adherence among clients (standardized $b=1.66$, 95% CI: [1.09, 2.54]).

Conclusions: Our qualitative and quantitative findings indicate that stigma in healthcare settings is a continuing problem in HIV clinic settings in the US South, and may contribute to sub-optimal HIV outcomes. Interventions are needed to address stigma, even in HIV clinics where health workers are assumed to be more knowledgeable and empathic, but may not be aware of their stigmatizing attitudes and behaviors related to the various identities of PLWH.

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A SYSTEMATIC REVIEW OF INTENSIVE OUTPATIENT CARE PROGRAMS FOR HIGH-NEED, HIGH-COST PATIENTS

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Background: A small proportion (5%) of the patient population account for 50% of U.S. healthcare expenditures. This population of high-risk, high-need patients are medically complex for numerous reasons, often including behavioral health needs. Intensive outpatient care programs (IOCPs) are emerging, innovative clinics which provide patient-centered care leveraging multidisciplinary teams. The overarching goals of IOCPs are to reduce emergency department (ED) visits and hospitalizations (and related costs), improve care continuity, and patient outcomes.

Purpose: The purpose of this review was to examine the effectiveness of IOCPs on multiple outcomes (e.g., costs, healthcare utilization, patient-reported outcomes) to inform clinical care.

Methods: A systematic search of the literature yielded 6 articles that met selection criteria.

Results: Studies varied in rigor of research design, analysis, and measurement of outcomes. Most studies reported evaluations of healthcare utilization ($n=4$) and costs ($n=3$), with fewer reporting results on patient-reported outcomes ($n=2$). Overall, there were decreasing trends in ED visits and hospitalizations. However, results on healthcare utilization varied based on time of follow-up, with shorter follow-up time yielding more significant results. Two of the three studies that evaluated costs, found significant reductions associated with IOCPs and one was identified as cost-neutral. Two studies reported improvements in patient-reported outcomes (e.g., satisfaction, depression, and anxiety).

Conclusion: Few studies evaluated patient characteristics and behaviors (e.g., engagement) which may serve as key mechanisms of program effectiveness. Future research should examine patient characteristics, behaviors, and clinic engagement metrics to inform clinical practice.

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ADDRESSING DIABETES IN A SAFETY NET PRIMARY CARE CLINIC: EFFECTIVENESS OF LIFESTYLE REDESIGN OCCUPATIONAL THERAPY

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Background: Primary care is an essential component of a well-functioning health care system. With the rise of chronic conditions, the US healthcare system has experienced enhanced demand for primary care services combined with a shortage of primary care professionals, increased burnout rates, and decreased access to health services. To address these issues, restructure of this sector is necessary, with interprofessional team-based care playing a key role in improving access and quality of care. To investigate the impact of integrating occupational therapy (OT) services within an interprofessional primary care team, we completed a hybrid effectiveness-implementation study of Lifestyle Redesign OT (LR-OT) in a safety net primary care clinic, with an initial focus on improving diabetes care.

Methods: Patients with diabetes and HbA1c >9.0% were enrolled using a randomized consent design in which patients were assigned to (a) be referred to LR-OT (n=73), or (b) serve as a no-contact comparison group (n=69). Patients who accepted the LR-OT referral (n=51) completed informed consent, pre-post surveys (SDSCA, SF-20), and up to 8 sessions of LR-OT. All randomized patients (n=142) had HbA1c and systolic and diastolic blood pressure (SBP/DBP) data extracted from the EMR for 6 months prior to, and 6 months following, their study enrollment date. EMR data from all randomized participants were compared on an intention-to-treat basis; pre-post surveys were analyzed among program completers (n=37).

Results: The average change in HbA1c in the 6-month intervention period, compared to the 6 months prior to the intervention, was -1.14 and -0.83 for the LR-OT and control groups respectively (Cohen's d=0.32). Similarly, blood pressure decreased in the LR-OT group and increased in the control group, producing effect sizes of 0.33 (SBP) and 0.35 (DBP). Pre-post data among program completers demonstrated significant positive changes in HbA1c (-0.9% decrease, p=0.003), health behaviors (SDSCA healthy eating +1.1 days/wk, p< 0.0001; blood glucose monitoring +1.3 days/wk, 0.003), and health status (SF-20 physical function +11.9, p=0.0003; mental function +7.3, p=0.02).

Discussion: Overall, findings demonstrate improvements in HbA1c, health behaviors, and overall health status among program completers, and favorable changes in HbA1c and BP in all patients, with a trend towards a more positive rate of change in the LR-OT group as compared to control group. We theorize that the improvements in HbA1c and BP among both treated and untreated patients may be, in part, due to positive changes in practice patterns clinic-wide attributable to the introduction of OT. As the pilot study lacked a comparison clinic with which to compare outcomes, further research is needed to investigate to what extent the improvement in untreated patients reflects such changes in practice patterns relative to other factors.

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UNDERSTANDING THE RELATIONSHIP BETWEEN NUTRITION AND ADOLESCENT'S MENTAL HEALTH: FOOD FOR THOUGHT

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Nutrition impacts adolescent mental health during a crucial time when depressive symptoms often develop. One previous study found connections between teens' depressive symptoms and dietary habits: higher depressive symptoms were associated with higher intake of energy-dense food (e.g. junk food/soda) but were not associated with vegetable consumption. This study concluded that attention to negative emotions might be beneficial and important to preventing and treating obesity, but also begs the question of whether attention to healthy eating may positively affect mood. To further elucidate this relationship, the present study examined the association between depressive symptoms, soft drink consumption, and vegetable consumption among a sample of adolescents (N=1243, 47% female, 29% Hispanic, mean age 14.9 years) presenting to an emergency department for any reason. Self-report data from screening surveys for iDOVE1, a study to prevent depression and peer violence in teens, were analyzed to identify associations between depressive symptoms and nutrition. Past 2-week depressive symptoms were measured by the Patient Health Questionnaire-9; nutrition habits were measured by the Youth Risk Behavior Survey about vegetable consumption and soft drink consumption in the last week. For the purpose of the present analysis, depressive symptoms and vegetable consumption were analyzed as continuous variables, while soft drink consumption was dichotomized (at least 1 soft drink in the last week vs. none due to skewed distribution). A multiple linear regression model was used to test the association between vegetable consumption and soft drink consumption on depressive symptoms, adjusting for age, gender, race, and SES. Results suggest a significant association between at least some soft drink consumption (B=.59 SE=.275 (p< .05)) and depressive symptoms but no significant association between vegetable consumption and depressive symptoms. Specifically, after adjusting for demographic and SES variables, as well as vegetable consumption, those who reported drinking at least one soft drink/week had a .59 unit higher mean depressive symptoms score compared to those who reported no consumption. Forthcoming analyses will explore the potential interaction between the two nutrition variables and their association with depressive symptoms. While the current study did not examine reciprocal effects of depressive symptoms on nutrition habits, the results do suggest a need for understanding the role of nutrition on mental health outcomes. Future research should explore how consistently these associations are found in other populations and focus on implementing programs to educate adolescents on the importance of nutrition and its relationship with mental wellness.

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IF YOU BUILD IT, WILL THEY COME? A MIXED METHODS STUDY OF CARE MANAGER PERSPECTIVES ON INTEGRATING MHEALTH INTO CLINICAL WORKFLOWS

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Background: Despite high interest in mobile platforms to transform care for chronic illnesses, including mental health disorders, there are few reports in the literature documenting implementation at scale in real-world settings.

Purpose: To understand Behavioral Health Professionals' (BHP) perspectives on the adoption and use of an Android-only mobile health platform deployed in the context of a pragmatic trial testing a collaborative care program for patients with PTSD and/or bipolar disorder in rural settings.

Methods: BHPs currently employed at one of 12 rural Federally Qualified Health Centers (FQHCs) in Washington, Arkansas, or Michigan with at least 1 Collaborative Care patient encounter recorded were invited to participate in a 60-minute semi-structured interview. Interviews used the Unified Theory of Adoption and Use of Technology 2 (UTAUT2) as a conceptual model and explored BHPs' experiences using the mobile platform, barriers to integration, and perceptions of its impact on clinical care. Interviews were audio-recorded, transcribed, and coded by 2 independent coders with reasonable agreement. When disagreements arose they met with an arbitrator to achieve consensus.

Results: Of 25 eligible BHPs, we interviewed 15 from 10 FQHCs. All BHPs agreed the platform only being available on Android phones restricted recruitment and integration. BHPs suggested making it available on iPhones and web browsers. BHPs also reported that the limited technology infrastructure in communities served by rural FQHCs was a barrier to adoption. Some patients who were not willing to engage in care via traditional methods would monitor their symptoms asynchronously via the app, but some BHPs expressed concern that use of a mobile app does not constitute active treatment. BHPs generally felt comfortable using mHealth tools, but incomplete adoption by patients and incompatibility with existing workflows interfered with wider use. The UTAUT2 model provided partial understanding of use patterns, but additional factors important to behavioral health use emerged such as crisis management and patient engagement.

Conclusions: To maximize adoption, mobile platforms should be deployed in settings with sufficient technological infrastructure and fully integrated into the clinical workflow. Future analyses will explore additional barriers and facilitators to system adoption using meta-data from the mobile platform, patient data from evaluative surveys, and encounter data from a care management tracking system.

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MEASURING RESPONSES TO HEALTH ANXIETY: DEVELOPMENT OF A NEW QUESTIONNAIRE

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Background: Health anxiety includes fear that one has a serious illness that has not been diagnosed. Previous research on health anxiety tends to focus on one coping mechanism, seeking reassurance that one is healthy, while the coping response of avoiding health information has received less attention. This study developed new measures of responses to health anxiety (avoidance, reassurance seeking).

Methods: Participants recruited through Prolific Academic completed an online survey (n=398). Eleven items were generated to measure health anxiety avoidance and reassurance seeking, based on previous literature. A patient advocate reviewed the questions. Psychometric analyses included tests of factor structure, reliability and validity.

Results: Exploratory and confirmatory factor analysis suggested four factors for the responses to health anxiety measure: general avoidance of health reminders; avoidance of medical care; general reassurance seeking; and reassurance seeking through medical care. Scores showed good internal consistency considering the number of items. The four measures of health anxiety response were moderately correlated (0.23–0.51) suggesting each measures a unique construct. All were positively associated with overall health anxiety (b's range 0.11 to 0.37) in multivariate analyses. General avoidance (b=0.06, p=0.02) and avoidance of medical care (b=0.04, p=0.046) were associated with general anxiety while general reassurance seeking (b=0.03, p=0.16) and medical reassurance seeking (b< 0.01, p=0.79) were not significantly associated with general anxiety in multivariate regressions. None of the four factors were associated with global mental health (p's >0.06).

Conclusions: Assessing the response to health anxiety may be crucial for determining impact on patients and planning treatments for health anxiety. The new measure can be used in research and, pending further validation, clinical care. Future research is needed on the impact of responses to health anxiety in populations with chronic illness, such as for fear of recurrence in cancer.

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ACCEPTANCE OF ILLNESS AMONG PATIENTS PURSUING TRANSPLANTATION

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Introduction: Acceptance of illness (i.e., continuing to find value in life despite the illness) has been linked to better mental health outcomes in patients with chronic diseases. This may be especially important among patients being considered for organ transplant, as emotional distress is related to poorer medical outcomes. However, acceptance of illness has not been assessed among patients pursuing transplant. The purpose of this study was to create a measure of illness acceptance and examine this construct's relationships with known risk factors for negative health outcomes following transplant.

Methods: Retrospective chart reviews were conducted for patients who completed a required pre-surgical psychological evaluation for lung or heart transplant, or left ventricular assist device (N= 290). During the evaluation, patients completed measures to assess mental health symptoms (Hospital Anxiety and Depression Scale), cognitive functioning (Montreal Cognitive Assessment), health literacy and numeracy, and catastrophizing. Patients also completed the Illness Acceptance Scale (IAS). To create the IAS, potential items were developed by two psychologists. These were then rated on goodness of fit to the construct from poor to excellent by 7 additional psychologists. Items were retained for the scale if they had an average rating of good to excellent fit.

Results: Patients primarily identified as African American (65.9%) and male (66.2%), with a mean age of 56 years. Patients were being considered for a left ventricular assist device and/or heart transplant (53.1%), lung transplant (46.6%), or both (.3%). Internal consistency for the IAS was excellent (Cronbach's alpha = .92). Acceptance of illness was negatively correlated with depression ($p < .001$), anxiety ($p < .001$), and catastrophizing ($p < .001$). Acceptance of illness was not related to cognitive functioning ($p = .07$), health literacy ($p = .35$) or health numeracy ($p = .29$).

Discussion: The Illness Acceptance Scale is a reliable measure for patients who are pursuing transplant. There was also evidence of convergent and divergent validity. A greater level of illness acceptance was related to fewer depressive and anxiety symptoms as well as lower levels of catastrophizing. This suggests that interventions aimed at increasing acceptance of illness may improve these symptoms among transplant candidates. Future research should evaluate whether increasing illness acceptance leads to better psychological and medical outcomes.

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LIFESTYLE MEDICINE FOR MENTAL HEALTH: A META-REVIEW OF THE TOP-TIER EVIDENCE

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There is increasingly large global interest in how behaviours typically associated with physical health (such as physical activity, diet, and smoking) may also be instrumental in mental health and psychological well-being. Within this, multiple national health bodies and professional organisations have begun to produce guidelines around the role of health behaviours such as physical activity, diet, sleep and smoking cessation in the promotion of mental health, and prevention of mental disorders. However, the overall evidence for using these lifestyle factors to reduce the risk of mental illness, or to improve recovery in those with mental health conditions, is unclear. Therefore, we performed a meta-review of all of the published 'top-tier evidence' (including meta-analyses of randomized controlled trials and prospective studies, along with Mendelian randomization studies) examining the role of physical activity, sedentary behaviour, sleep quality and duration, various dietary factors and smoking/tobacco consumption in the incidence and prognosis of mental illness. Through systematic aggregation of the findings from these multiple forms of top-tier evidence, we have produced evidence overviews for targeting specific lifestyle factors in the prevention and treatment of various mental disorders, including depression, anxiety, psychotic and bipolar disorders and ADHD. The results of the evidence syntheses, and directions for lifestyle interventions each of these disorders, will be presented in the session.

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IS SCROLLING BAD FOR EVERYONE? EXPLORING INDIVIDUAL NETWORKS OF INSTAGRAM USE AND MOOD

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Instagram has over 1 billion active users per month, and recent research has connected its use with myriad negative outcomes, including depression and lower self-esteem. Other findings, however, have produced equivocal results, indicating that use is not harmful. This present study investigated Instagram use on an idiographic basis to see if the true answer lies within the individual; that use is bad for specific people, but not necessarily for everyone. Using ecological momentary assessment, we examined the relationships amongst Instagram use and mood. We employed contemporaneous analyses to examine how these specific constructs were associated at any given point in time. Subjects ($n=51$) were surveyed on Instagram use and mood for 21 days. Nomothetic and idiographic network models were employed to the data, using strength centrality as a measure to indicate the strength of using Instagram with other nodes in each individual network. Results indicate a significant variability in the relationship between Instagram use and mood amongst the networks. The mean was 0.194, indicating that for the average participant there was not a very strong relationship between the *Used Instagram* node and the other nodes in the networks. The method's potential for analysis of individual symptom patterns is further demonstrated by three exemplar participants, with normalized strength centralities ranging from 0.020–0.502. Our findings highlight individual differences amongst social media use and underscore the importance of investigating the potential detrimental effects of social media use on an individual basis.

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TOBACCO CESSATION SERVICES IN LGBT-SERVING MENTAL HEALTH FACILITIES IN THE U.S.

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Background: LGBT populations have higher rates of both tobacco use and mental health conditions than heterosexuals, suggesting a need for integrated mental health and tobacco cessation services specific to these populations. However, the extent to which LGBT-serving mental health treatment facilities offer integrated tobacco cessation resources is unknown. Furthermore, the prevalence of smoke-free policies in these facilities (smoking prohibited on the premises) has yet to be examined.

Methods: We used the 2017 National Mental Health Services Survey of 11,582 mental health treatment facilities in the U.S. to describe the characteristics of LGBT-serving mental health facilities that provide tobacco cessation services. We also assessed the prevalence of smoke-free policies in these facilities.

Results: Approximately 16% of mental health treatment centers provided LGBT-focused services. Of these LGBT-serving facilities, 63% provided any tobacco cessation service. The state with the most LGBT-serving facilities providing cessation services was New York (88% of New York LGBT-serving facilities). The most common cessation services provided across facilities were tobacco screening (87%) and cessation counseling (77%). The least common services were non-nicotine cessation medications (54% did not provide) and nicotine replacement therapy (NRT) (55% did not provide). Only half of LGBT-serving facilities had smoke-free policies.

Conclusions: A large proportion of U.S. LGBT-serving mental health treatment facilities provide tobacco cessation services. However, the provision of these services is not ubiquitous, and not all facilities provide comprehensive services. Specifically, non-nicotine cessation medications and NRT may be provided less frequently, despite demonstrated efficacy. Increased provision of comprehensive tobacco cessation services and implementation of smoke-free policies in all mental health facilities can improve both tobacco cessation and mental health outcomes in LGBT populations.

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FAMILY STRAIN PREDICTS SUBSEQUENT DEPRESSIVE SYMPTOMS: HOPE MEDIATES AND SELF-COMPASSION MODERATES THE RELATION

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Interpersonal strain is linked with depressive symptoms in middle-aged adults. One possible mechanism accounting for this relation is a reduction in hope, defined as the belief in one's capacity both to reach and to generate a variety of ways to obtain goals. The strength of the strain-depressive symptoms relation is not uniform across individuals, however, pointing to the likelihood that individual differences in the ability to successfully navigate relationship strain play a role in mitigating its negative effects. One potential moderator of the strain – depressive symptoms relation is self-compassion, which encompasses the capacity to respond to one's own negative thoughts and experiences in a kind and nonjudgmental way. Although theory and empirical evidence suggest that self-compassion is protective against the impact of stress on mental health outcomes, little research has investigated how self-compassion operates in the context of relationship strain. In addition, few studies have examined psychological mechanisms by which self-compassion protects against mental health outcomes, depression in particular. Thus, this study examined 1) the extent to which hope mediates the relation between family strain and depressive symptoms, and 2) whether these indirect effects are conditional on self-compassion in a community sample of middle-aged adults.

Self-reported family strain, self-compassion, hope, and depressive symptoms were assessed in a community sample of 762 middle-aged adults aged 40–65. Follow-up measures of depressive symptoms were assessed approximately 20 months later. Results from structural equation models indicated that hope mediated the relation between family strain and depressive symptoms and the indirect effect was conditional on levels of self-compassion. For individuals high versus low in self-compassion, strain-related declines in hope predicted smaller increases in depressive symptoms.

Taken together, the findings suggest that family strain may lead individuals to experience less hope and subsequent increases in depressive symptoms. However, a self-compassionate attitude may serve as a resilience resource, weakening the hope – depressive symptoms relation, a finding that holds promise for future research on the development and refinement of self-compassion interventions.

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SOCIAL MEDIA EXPERIENCES AMONG DEPRESSED AND NON-DEPRESSED YOUNG ADULTS

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Introduction: While an increasing amount of social interaction occurs on social media (SM), the impact of SM on mental health among young adults is not fully understood. In this qualitative investigation, we explored the positive and negative aspects of SM experiences in order to provide insight into the range of SM experiences for depressed and non-depressed young adults.

Methods: We conducted a national online survey of U.S. adults ages 18 to 30 in March 2018. Participants were asked about how SM has had 1) positive and 2) negative effect(s) on their lives using two open-ended questions. The 9-item Patient Health Questionnaire (PHQ-9) was used to select a purposeful random sub-sample of 50 participants with severe depressive symptoms and 50 without depressive symptoms. We utilized thematic analysis incorporating elements of content analysis to systematically identify themes in participants' responses which were then compared between depressed and non-depressed cohorts using descriptive statistics.

Results: Sixteen themes emerged regarding the perceived effects of SM: nine positive and seven negative. For both depressed and non-depressed participants, *connection with others* and *exposure to others' negativity* were the most frequently mentioned positive and negative effect of SM, respectively. Whereas positive effects of SM were reported with similar frequency between depressed and non-depressed participants, more variation was observed in reports of negative effects between the two cohorts. SM was noted as a *distraction from real life* more often by non-depressed than depressed participants (n=15 and n=5, respectively). *Fear of being judged* was mentioned solely by depressed participants (n=7).

Conclusion: While SM may be beneficial for both depressed and non-depressed participants insofar as it is perceived as a method of social connection, participants reported negative effects for which tools to filter exposure to negative content may be useful. Depressed participants more frequently reported several negative effects of SM, which may reflect cognitive and emotional sensitivities associated with depression. Future research using more in-depth qualitative probing may further elucidate these findings and inform recommendations for optimal SM use.

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A MENTAL HEALTH INFORMED PHYSICAL ACTIVITY INTERVENTION DELIVERED ONLINE FOR FIRST RESPONDERS AND THEIR INFORMAL CARERS

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Background: First-responders (police, fire and ambulance officers) are at a significantly increased risk of experiencing poor mental health, including depression, anxiety and post-traumatic stress disorder. Physical activity (PA) interventions can improve mental health outcomes in populations experiencing poor mental health. More research is however needed to evaluate accessible, low cost ways of delivering such programs. Social media may be a potential platform for delivering group-based PA interventions. It is well established that informal caregivers including partners, family and friends play an important role in supporting people with mental health problems but often at the expense of their own health. This study therefore aims to determine if an online PA intervention delivered through Facebook is feasible, acceptable and efficacious in improving mental health in first-responders and their informal caregivers. The iterative development of this intervention has occurred through collaboration with advisors with lived experience of working as a firefighter, and of living with mental illness.

Methods: We co-designed a 10-week, PA program delivered via a private Facebook group. The research team delivered education and motivation around different weekly topics (e.g. goal setting and reducing sedentary behaviour) and provided participants with a FitBit. First-responders were asked to nominate an informal caregiver to also participate. We assessed feasibility and also explored the impact on mental health symptoms, sleep quality, quality of life and PA levels. A multiple time series design compared slope of change between baseline and intervention in levels of psychological distress, measured every 2 weeks. A slope was fitted to the repeated scores during the baseline (control) and the intervention.

Results: Twenty-four participants (12 first-responders and their caregivers) were recruited and 88% (n=21) completed post-assessment questionnaires. The program was feasible and well accepted. Exploratory analyses of pre and post outcomes found significant reductions in total depression, anxiety and stress scores (p=0.047), and quality of life (p=0.0005). A significant improvement in self-reported minutes of walking (p=0.037) was found, but not in sedentary time or structured exercise. Changes in perceived social support to exercise (p=0.065) and sleep quality (p=0.2846) were not significant. Levels of psychological distress did not change significantly during the baseline; b = -0.09, p = 0.765, while during the intervention they decreased significantly, b = -1.067, p = 0.003.

Conclusion: The results of our pilot show that using Facebook to deliver a mental health informed PA program is feasible and yields significant improvements in mental health symptoms and quality of life. These promising pilot results have informed a large-scale trial which is currently underway.

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ASSOCIATIONS OF MEETING 24-HOUR MOVEMENT GUIDELINES AND MENTAL HEALTH AMONG US CHILDREN AND ADOLESCENTS.

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Background: Emerging evidence suggests optimal child health is maintained by concurrently attaining appropriate levels of physical activity (PA), screen time, and sleep (i.e., a “healthy 24 hours”). However, few data exist on the association between meeting guidelines for these movement behaviors and mental health – data vital to inform interventions designed to combat increasing rates of mental health disorders in children. The purpose of this study was to examine the associations of meeting movement guidelines (PA, screen time, and sleep) separately, and in combination, with mental health disorders (depression, anxiety, and attention-deficit/hyperactivity disorder [ADHD]) among US children.

Methods: This analysis used data from the 2016–2017 National Survey of Children’s Health, a nationally representative sample. Children’s PA, screen time, and sleep were assessed by parental report. To assess depression, parents were asked: “Has a doctor or other health care provider EVER told you that (child’s name) has Depression?” Analogous questions were asked for anxiety and ADHD. Logistic regression was used to examine the association of meeting movement guidelines (7 d/wk with >60 min of PA; < 2 h/day of TV viewing and computer use; 9–12 h sleep for ages 6–12; 8–10 h for ages 13–17) with mental health disorders.

Results: Meeting each of the movement guidelines was associated with a lower odds of depression (PA odds ratio [OR]: 0.58; 95% CI: 0.43, 0.78; sleep OR: 0.50; 95% CI: 0.41, 0.62; screen time OR: 0.50; 95% CI: 0.38, 0.65), anxiety (PA OR: 0.59; 95% CI: 0.48, 0.73; sleep OR: 0.57; 95% CI: 0.48, 0.67; screen time OR: 0.74; 95% CI: 0.61, 0.89), and ADHD (PA OR: 0.80; 95% CI: 0.66, 0.97; sleep OR: 0.76; 95% CI: 0.62, 0.92); with the exception of screen time and ADHD (OR: 0.89; 95% CI: 0.74, 1.07). Meeting a greater number of movement guidelines was dose-dependently associated with lower odds of depression, anxiety, and ADHD (Table).

Conclusion: Among US children, meeting one or more movement guidelines is associated with reduced likelihood of having depression, anxiety, and ADHD, with the greatest reduction found when meeting PA, screen time, and sleep guidelines simultaneously. The present findings cannot test causal associations but raise the possibility that initiatives targeting 24-hour movement behaviors may help to combat rising mental health disorder rates in US youth.

Table. Odds Ratio of Depression, Anxiety or ADHD Among Children meeting 0, 1, 2 or 3 Guidelines in the 2016–2017 National Survey of Children’s Health

	Depression	Anxiety	ADHD
Movement Guidelines Met	OR (95% CI)	OR (95% CI)	OR (95% CI)
None	1.00 (ref)	1.00 (ref)	1.00 (ref)
1	0.52 (0.41, 0.66)	0.60 (0.49, 0.72)	0.78 (0.63, 0.98)
2	0.26 (0.20, 0.36)	0.39 (0.31, 0.50)	0.66 (0.51, 0.85)
3	0.26 (0.14, 0.50)	0.33 (0.22, 0.49)	0.59 (0.42, 0.84)
<i>P-trend</i>	<i>p</i> < 0.001	<i>p</i> < 0.001	<i>p</i> < 0.001

All models adjusted for age, sex, race, Hispanic ethnicity, poverty level, and BMI

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EXPERIENCES OF LAYERED STIGMA AMONG PATIENTS WITH CO-MORBID DIABETES AND DEPRESSIVE SYMPTOMS IN INDIA

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Persons with comorbid type 2 diabetes mellitus (T2DM) and depression face self-care challenges due to the stigma of mental illness and diabetes. There is evidence that the health effects of stigma are additive when a person is affected by multiple stigmatized conditions, or if he/she also belongs to a socially deviant or marginalized group, yet, research on the phenomenon of stigma layering has almost exclusively been investigated among persons with HIV/AIDS. As the global prevalence of diabetes continues to rise, particularly in low- and middle-income countries, it is critical to assess how chronic-disease self-management and treatment-seeking behaviors change when individuals experience intersecting forms of stigma. We, therefore, explored perceptions of stigma among patients with T2DM and depressive symptoms. Patients participating in an integrated depression and diabetes treatment care model across two urban diabetes clinics in India were recruited to complete semi-structured interviews as a part of a trial process evaluation. Sixty-two individuals participated, twenty-seven from a government clinic in north India and thirty-five from a private clinic in south India. An intersectional analysis was conducted to analyze the qualitative data. The analysis identified 3 salient themes: fear of becoming a burden, controlling the narrative, and shifting concentration to promote health. These themes reflected experiences of stigma in interpersonal relationships. Patients expressed a greater willingness to disclose and seek treatment for secondary diagnoses as a result of what circumstances patients qualified as evoking shame. Additionally, experiences of socioeconomic disadvantage were described as increasing individuals’ vulnerability to mental illness and creating barriers to chronic disease self-care and treatment adherence. Results may inform intervention efforts to minimize patients’ self-stigma in chronic care settings.

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FRAMEWORK MATRIX ANALYSIS FOR INTERVENTION DEVELOPMENT, AN EFFICIENT AND EFFECTIVE APPROACH TO QUALITATIVE DATA

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Introduction: The value of qualitative data in intervention development has long been recognized. It is especially helpful in Phase 1 and 2 trials during the process of intervention development or adaptation. Many health behavior researchers, however, may lack the training and time that traditional thematic analysis approaches (e.g., grounded theory) require. Further, these techniques may not align with goals and timelines of efficient behavioral intervention development. We describe the application of an established, but under-used, qualitative research method, framework matrix analysis (FMA). We present a schema for applying FMA to intervention development using a recently completed project adapting an intervention for depression and multiple health behavior change in cardiac event patients as an example.

Methods: We conducted semi-structured qualitative interviews with 10 depressed cardiac event patients and 8 providers who regularly treat these patients. We applied FMA to verbatim transcripts. This involved a five-step process of: (1) familiarization, (2) identifying a thematic framework, (3) indexing, (4) charting, and (5) mapping and interpretation. All steps in this process involved iterative review of transcripts by two or more trained researchers and structured team meetings to review, compare, and discuss emergent content.

Results: (1) Familiarization with transcripts resulted in parallel thematic frameworks for patients and providers. (2) Themes included *a priori* topics from the semi-structured interview guides (e.g., barriers to behavior change) and emergent themes (e.g., stigma regarding mental health treatment). Our conclusions were informed by our application of codes to transcripts (3, indexing) and abstraction of key content for each theme in each transcript (4, charting) and the formation of a unified document summarizing input from all transcripts for each theme (5, mapping). FMA results informed adaptations in intervention structure (in-person vs. telephone vs. home visits), content (e.g., sequential rather than concurrent behavior change), and language (e.g., de-stigmatizing language regarding mental health). FMA findings also reinforced aspects of the planned manual that did not need adaptation (e.g., choice of interventionist, overarching treatment approach).

Discussion: FMA offers a structured, approachable method for using qualitative data collection to develop behavioral interventions in a timely manner.

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DOES RACIAL/ETHNIC CONCORDANCE BETWEEN PARTICIPANTS AND RESEARCHERS PREDICT STUDY ENGAGEMENT? A MULTI-LEVEL ANALYSIS

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Introduction: The differential attrition of racial/ethnic minority participants in clinical research is a major threat to advancing medical and behavioral science. Racial/ethnic concordance between study participants and research staff has not been systematically explored. Our aim was to examine the influence of racial/ethnic concordance between participants and research staff on study attrition.

Methods: Pooled data from participants and clinical research coordinators (CRCs) in six longitudinal studies of adults with asthma or chronic obstructive pulmonary disease. Dyads were concordant if the patient and research coordinator were of the same racial/ethnic group. Attrition was operationalized as lack of participation in the second study interview (Time 2), and one year after enrollment. Multilevel modeling examined the effect of racial/ethnic concordance on attrition at each study time point while accounting for nesting by CRC and controlling for sociodemographic factors previously identified as relevant to attrition.

Results: The sample of 509 adults (71% female) had a mean age of 66 years (SD = 9.7). Participants were diverse in terms of race and ethnicity: 47.7% identified as Latino; 31.6% as Black; and 20.7% as non-Hispanic White. Spanish language, lower education, and greater depressive symptoms predicted greater attrition, but these main effects disappeared in adjusted models. Race/ethnicity, age, gender and health literacy did not predict attrition. Racial/ethnic concordance was significantly associated with attrition at time 2 ($b = 1.59$, $SE = .47$, $p < .001$) and at one year ($b = 1.35$, $SE = .48$, $p = .005$). That is, there was greater attrition among concordant than discordant dyads and this effect was substantial: Participants in concordant dyads had 5 times greater odds of dropping out at Time 2, and 4 times greater odds at one year compared to those in discordant dyads.

Conclusion: Racial/ethnic concordance between participants and research staff was related to greater attrition in a large sample of individuals with respiratory illness. If the individuals who complete longitudinal studies are not representative of those experiencing poorer health outcomes, the validity of the study's conclusions is threatened. Interactions with research staff may be critical to bridging the health disparities gap and should be considered important parts of the study environment.

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DEVELOPING AN INSTRUMENT TO EVALUATE THEORY-BASED PSYCHOSOCIAL CONSTRUCTS RELATED TO INCREASED FIBER CONSUMPTION

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Background: Obesity is a major public health concern, with low consumption of fiber-rich foods, such as fruits and vegetables, commonly cited as a causal factor. Public health interventions should have a strong theoretical basis, as theory-based interventions are more effective than those that do not utilize theory. The Reasoned Action Approach (RAA) is a new and emerging theory in social and behavioral science, containing constructs from theories such as the Theory of Planned Behavior, and Health Belief Model. While a promising theory, the RAA has not been extensively used in research and practice. Moreover, valid and reliable surveys have yet to be developed for this model.

Purpose: The purpose of this study was to show the development of an instrument measuring the constructs of the RAA in regards to fiber consumption. Both direct and indirect measures were developed.

Methods: First, all of the constructs of the RAA were constitutively and operationally defined. Next, a qualitative study was done to elicit behavioral beliefs (advantages/disadvantages), injunctive normative beliefs (referents who approve/disapprove), descriptive normative beliefs (referents who are most/least likely), and control beliefs (factors that enable/prevent). Afterwards, a panel of 6 experts established face and content validity of the survey. Finally, data were collected from an adult sample (n=878), and psychometric data revealed indices of construct validity (confirmatory factor analysis) and internal consistency reliability (Cronbach's alpha).

Results: The average age of adults was 51.5 years (± 12.8), and a majority were Caucasian (81%), and women (93%). Results showed the top beliefs as: behavioral beliefs [a] lose weight, b) have more energy; injunctive normative beliefs [a] parents, b) doctor; descriptive normative belief [a] people who are trying to lose weight, b) friends; and control beliefs [a] planning my meals ahead of time (enable), b) having someone else plan my meals (enable), and c) not having enough time (prevent). With regards to construct validity, the model structural had adequate fit [Root Mean Square Error of Approximation=0.063; Tucker Lewis index=0.952; Comparative Fit Index=0.960], and all items significantly loaded on its corresponding scale. For internal consistency reliability, Cronbach's alpha scores were >0.70 , indicating strong reliability for each scale.

Conclusions: Overall this survey appears to be promising for helping researchers and practitioners study the determinants of fiber consumption, and its theoretical antecedents. Understanding the theoretical determinants of fiber consumption will help bridge the gap between theory and practice, and provide health practitioners information to aid in the development of effective public health interventions.

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DO RESEARCH PARTICIPANTS DIFFER BY RECRUITMENT SOURCE? OBSERVATIONS FROM A STUDY OF NEWLY-DIAGNOSED BREAST CANCER PATIENTS

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Background: It can be difficult to recruit newly-diagnosed cancer patients for research, as they are often navigating an emotionally fraught period. Social media groups and cancer-specific virtual platforms are increasingly being used to connect patients to researchers and appear promising given their wide reach. However, differences in participant characteristics recruited from these sources are not well understood.

Objective: This study aimed to: (1) compare recruitment strategies (hospital-based, breast cancer-specific networks, social media) in enrollment metrics, and (2) among enrolled participants, evaluate demographic differences based on recruitment approach.

Methods: Data from an NCI-sponsored study of factors influencing the choice of breast conserving surgery vs. bilateral mastectomy for breast cancer were evaluated. The main recruitment sources included (1) hospital-based methods that involved screening electronic medical records to identify eligible patients, (2) nation-wide email "blasts" through a program called Army of Women (AOW) that aims to connect breast cancer studies with interested volunteers, and (3) posts on Facebook breast cancer support groups. Descriptive statistics evaluated demographic characteristics and recruitment metrics. Chi-square and One-Way ANOVA compared demographic characteristics between the recruitment sources.

Results: Participants (N=136) averaged 49 years old (SD=11.1), were primarily White (78%), employed (68%), high-income (61% had a yearly income $> \$100,000$), and educated (44% achieved $>$ bachelor's degree). The majority of screened participants were found via Facebook (40.7%, n=122/300), followed by hospital-based (25.3%, n=76/300) and AOW (15.7%, n=47/300). Hospital-based methods yielded the highest enrollment rate from eligible participants (81.7%, n=49/60), compared to AOW (61.8%, n=21/34) and Facebook (44.2%, n=38/86). No significant differences in age, race, ethnicity, education, income, employment, or cancer stage were identified between the recruitment sources ($p's > .05$).

Discussion: Findings suggest that, while hospital-based recruitment methods may yield higher success at enrolling newly-diagnosed cancer patients, studies with limited resources may use social media to reach a wider audience that is equally as representative. Future research should explore differences in patient reported outcomes based on recruitment source to confirm equivalence among recruitment strategies.

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ARE CURRENT ELICITATION TECHNIQUES CONFOUNDED WITH MOTIVATION? HOW NATURAL LANGUAGE MAY HINDER THEORY-GUIDED RESEARCH

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Background: In quantitative research the use of natural language has raised concerns in regards to the validity of standard self-efficacy scales. This has yet to be demonstrated in qualitative research. To understand what factors may prevent or promote one's self-efficacy to perform a behavior, Fishbein and Ajzen recommend eliciting 'control beliefs' by asking individuals what 'prevents' and 'enables' them to perform a behavior. Natural language words, such as prevent and enable are often ambiguous, and thus may not give an accurate picture of what impacts one's self-efficacy.

Purpose: Therefore, the purpose of this study was to compare standard elicitation techniques for barriers and enablers for physical activity and sleep behaviors, to an alternative technique in which participants were told to only consider the literal meanings of the words 'prevent' and 'enable' (and not the figurative meaning).

Methods: College students were randomized into two groups. Group 1 (n=177) used the standard elicitation methodology outlined by Fishbein and Ajzen (i.e. what prevents you from doing behavior X; what enables you to do behavior X). Group 2 (n=176) however was given a small vignette before each elicitation, to encourage participants to think of the literal meaning of the words "prevent" (i.e. something that would not make it possible for you to perform behavior X) and "enable" (i.e. something you would need to make it possible for you to perform behavior X). Participants were required to give at least two factors for each type of belief (sleep/physical activity and prevent/enable). Responses were then analyzed by two blinded researchers, and codified. Later, these codes were labeled as 'threat to capability', 'potential threat to capability' and 'priority/not a threat to capability'.

Results: Students in both groups reported significantly different types of control beliefs. Those in the control group reported significantly more overall beliefs for each category ($p < 0.05$, except sleep/enable), suggesting poorer discrimination in interpreting what was meant by "prevent" and "enable". In addition, students in the control group reported significantly more beliefs that were labeled as a 'priority/not a threat to capability' while students in the treatment group reported significantly more beliefs labeled as 'threats' or 'potential threats' to capability.

Conclusions: This study demonstrates when self-efficacy-related control beliefs are elicited, natural language words such as 'prevent' and 'enable' have the potential to confuse people about the intent of the question. These evaluations are meant to help us understand what impacts one's self-efficacy to perform a behavior, but in fact are informing us about what factors also impact their motivation. Alternative elicitation procedures, such as vignettes that clarify terms beforehand, may result in greater fidelity when eliciting beliefs.

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"I FEEL COMFORTABLE BECAUSE SHE IS NOT MY FAMILY": YOUNG WOMEN'S EXPERIENCES UNDERGOING PROXY PARENTAL CONSENT IN SOUTH AFRICA

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South Africa has one of the highest incidence of HIV among adolescent girls and young women (AGYW) ages 15–24 in the world. Research is needed to reduce HIV risk among AGYW, but laws state that the age of consent for research purposes is 18 years of age. This poses challenges to research and may limit the impact of HIV prevention strategies among AGYW. This study explored the experiences of AGYW who were under 18 years old at the time of consent and who engaged in a parental proxy consent procedure called In Loco Parentis (in place of parent) to enroll in a behavioral HIV prevention trial. Older women identified by the participant or community leaders identified by research staff consented for the AGYW, in place of their parent, to participate in the trial. In Loco Parentis was approved by the U.S. and South African-based IRBs. Participants were Black African (n = 13) and Coloured (n = 18) AGYW who were ages 18 or older at the time of the focus group discussion (FGD), were younger than 18 during enrollment into the trial, and had completed the trial. Following consent, FGDs (2 with Black African and 2 with Coloured AGYW) were conducted. FGDs were audio-recorded, notes taken, and translations done. Transcriptions were coded by two independent coders using open coding

Methods: Results identified four main themes related to the In Loco Parentis consent procedure: (1) comfort and confidentiality related to the In Loco Parentis, (2) clarity and respect related to how the procedure was explained and implemented, (3) maternal figures who served as the In Loco Parentis, and (4) the potential influence of parental consent on participation. The In Loco Parentis consent process was experienced as respectful. Participants were comfortable with community leaders, aunts, or older sisters as parental consent proxies. Many participants reported that if parental consent was required that they would not participate, while others reported that they would still participate in the study. AGYW reported that they were concerned that their parents would try to breach their confidentiality regarding their HIV status, pregnancy, and positive drug test results if parental consent was required. Our findings suggest that the experiences of AGYW who enrolled in this HIV prevention trial using In Loco Parentis consent were positive. In Loco Parentis consent methods may be a viable alternative or supplement to parental consent in HIV-related studies among AGYW.

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VETERAN BELIEFS ABOUT THE CAUSES OF GULF WAR ILLNESS AND EXPECTATIONS FOR IMPROVEMENT

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Approximately one-third of Veterans deployed to the Gulf region during Operations Desert Storm/Desert Shield experience persistent medically unexplained physical, neurocognitive, and affective symptoms collectively referred to as Gulf War Illness (GWI). While the specific etiologies remain unknown, Veterans' causal attributions of these chronic physical symptoms may impact expectations for improvement and influence best clinical practices. Therefore, our goal was to explore the relationship between attributions of GWI and patients' expectations for improvement.

Veterans who met the Kansas definition for GWI participated in an RCT of Problem Solving Therapy. Participants also completed self-report measures assessing causal attributions of GWI symptoms (e.g., military deployment-related exposure, psychological stress, physical, behavior including lifestyle choices such as diet, physical activity) and expectations for improvement over 6-months. Regression examined main effects of Veterans' attributions of GWI symptoms and covariates on expectations for improvement.

Participants ($N=262$) were predominantly middle-aged (mean[SD]=52.9[7.3] years old), male (88%), and White (72%), Black (21%), and had household incomes over \$40,000 (79%). 74.4% strongly agreed that military deployment was a cause while only 22.6% agreed or strongly agreed that behavior was a cause. Black Veterans reported higher expectations for improvement ($M=7.2, SD=4.6$) than non-Black Veterans ($M=4.7, SD=4.2$; $t(260)=-3.90, p<.001$). Endorsing behavior was associated with greater expectations ($\rho=.26, p<.001$), while endorsing military deployment was associated with worse expectations ($\rho=-.14, p<.03$). Neither psychological nor physical causes were related to expectations for improvement ($ps>.05$). When all causes were entered together in a regression model ($R^2=.11, p<.001$), only the individual's own behavior retained its significance ($B=.23, p<.001$).

Those who partially attributed GWI symptoms to their own behavior showed greater expectations for improvement than those who attributed their symptoms to military exposure. Understanding patients' causal attributions of medically unexplained symptoms may be important for health professionals to consider when communicating about symptoms, treatment, and goals. A study limitation is that this was a self-selected sample of Veterans with GWI and thus these results may not generalize to those with other chronic illnesses or non-treatment-seeking samples.

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ADDRESSING PSYCHOLOGICAL DISTRESS IN A NATIONAL WEIGHT MANAGEMENT PROGRAM: RESULTS OF AN INTEGRATED PILOT STUDY

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Obesity is highly comorbid with psychological symptoms in Veterans, particularly posttraumatic stress disorder (PTSD), depression, and anxiety. Obese veterans with comorbid psychological symptoms often display suboptimal weight loss and poor physical functioning when participating in weight management programs. The MOVE! program aims to increase healthy eating and physical activity to promote weight loss in obese Veterans. Addressing psychological barriers is necessary to maximize outcomes in MOVE! for Veterans with PTSD, depression, and anxiety. We examined the preliminary outcomes of administering the Healthy Emotions and Improving Health Behavior Outcomes (HERO) intervention. HERO is an adjunctive CBT to MOVE! that addresses PTSD, depression, and anxiety symptom barriers to engagement in physical activity.

Methods: Thirty-four obese Veterans with a diagnosis of PTSD, depression, and/or anxiety, who were attending MOVE! were assigned to the 8-session HERO group or the usual care (UC) group. Veterans completed assessments of PTSD, depression, and anxiety symptoms, physical activity, physical functioning, and weight at baseline, 8- and 16-weeks post-treatment. Changes from baseline to 8- and 16-week follow-up were assessed using independent samples t-tests and analyses of covariance.

Results: At 8 weeks post-treatment, participants in the HERO group had significantly higher step counts per day in comparison to the UC group (5,699 steps vs. 3063; $p<.01$). Similarly, at 16 weeks post-treatment, the participants in the HERO group continued to experience a significant increase in daily steps taken per day (5,485 steps vs 3084; $p<.01$) as well as statistically and clinically significantly lower scores on the depression symptom (6.3 + 7.1; $p=0.02$) and PTSD symptom (32.1 + 20.8; $p=0.05$) severity. Participants in the HERO group also demonstrated significantly higher scores on the physical functioning inventory in comparison to the participants in the UC group (44.1 + 12.1 vs. 35.7 + 10.7, $p=0.04$) at 16 weeks post-treatment.

Conclusions: Providing an adjunctive treatment to MOVE! that addresses psychological distress has potential benefits for psychological symptom reduction, engagement in healthy dietary habits, and greater physical activity for individuals who traditionally experience barriers to making positive weight management changes.

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CHANGE THAT MATTERS: TRAINING PRIMARY CARE PHYSICIANS IN BRIEF, EVIDENCE-BASED HEALTH BEHAVIOR CHANGE INTERVENTIONS

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Primary care is an ideal setting in which to address health behavior change (HBC) because of easy access, continuity, and the development of trusting, collaborative relationships between patients and primary care providers (PCPs). Despite the fact that several brief HBC interventions have been found to be effective when delivered by physicians, PCPs spend less than 1% of their time addressing lifestyle in visits. Further, when PCPs do address HBC, they rarely go beyond a simple explanation of risk. PCP barriers to addressing HBC may include lack of training, low confidence, and a dearth of easily accessible, evidence-based tools to use with patients. Our interdisciplinary team developed the *Change that Matters* curriculum to train PCPs in brief, evidence-based interventions for six health behaviors (sleep, physical activity, alcohol reduction, smoking cessation, healthy eating, and medication adherence) and includes three parts: didactic training (5 90-minute sessions), templates for the electronic medical record to guide the discussion, and interactive patient handouts. This study's purpose was to determine if the curriculum (a) is acceptable to PCPs and (b) increases PCP confidence in, perceived efficacy of, and frequency of delivering HBC interventions. A mixed-methods pilot study design was used to evaluate the implementation of the curriculum in a family medicine residency clinic. Resident PCPs ($N = 15$) completed pre- and post-implementation surveys (follow-up time = 15 months), and 10 PCPs completed a post implementation qualitative interview. Content analysis was used to extract qualitative themes using Nvivo software. Hierarchical linear models revealed moderate to large increases in PCP confidence in and perceived effectiveness of delivering HBC interventions (for all except physical activity) from pre-post intervention ($ps < .05$, Cohen's $ds = .70$ – 1.34). Frequency of using HBC interventions did not change (with the exception of smoking cessation which increased). Qualitative themes indicated that the curriculum gave PCPs concrete tools to address HBC, helped structure their discussions with patients, and increased their confidence. Results suggest that the *Change that Matters* curriculum is acceptable to PCPs and improves their confidence in and perceived effectiveness of delivering HBC interventions. Future studies are needed to explore the impact of the curriculum on patient behavior.

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DEVELOPING HEALTHY LIFE HABITS IN UNRUPTURED INTRACRANIAL ANEURYSMS PATIENTS: A PROOF OF CONCEPT

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Background: The prevalence of Unruptured Intracranial Aneurysms (UIAs) has been rising over the last years, due to increasing usage of neurovascular imaging. Considering that the rupture of an aneurysm is associated with mortality or disability, and that smoking and hypertension are risk factors for this, it is important to enhance healthy habits in these patients.

Objective: To determine the effectiveness of a workshop, based in the Health Belief Model, oriented to provide strategies that could enhance healthy habits in UIAs patients.

Method: We designed a 3-hour workshop oriented to increase understanding of the relation between healthy habits and the risk of rupture. Additionally, we sought to provide them with strategies for developing and maintaining healthier life habits. Afterwards, we developed a proof of concept with 28 UIA patients (mean age: 64.6 years, ranging from 43 to 82, 18% male). At the end of the workshop patients were requested to specify a goal behavior and reinforcements for performing it. Participants were contacted at 1 and 3 months for follow-up.

Results: 92.9% and 64.3% of the sample was contacted at the 1 and 3 month follow-up, respectively. On average, there was a 60% and 77% rate of goal achievement at these two points in time. Using the Matrix Method to analyze results, we found there were four main categories that affected behavior change in participants. Those who reported enablers for creating and maintaining the behavior achieved their goal by over 80%, except for one participant (70%). Contributing factors were reported by nine participants as very important for maintaining behaviors. Within said factors better health perception and social support were the most important. As for barriers, participants with higher achievement rates reported fewer obstacles for performing behaviors, and reported more restraining barriers such as illness, in contrast to lower achievement rates' participants which reported less restraining barriers such as being on vacation or not keeping track of the behavior. Finally, all participants with goal achievement over 80% reported feeling more rested, healthier and calmer.

Conclusion: We concluded that the workshop enables patients to create strategies for acquiring and maintaining healthy habits. It is important to highlight the relevance of planning, tracking and reinforcing behaviors for goal achievement. A better strategy for following up with patients is necessary for better attrition rates.

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PREDICTORS OF CHANGE IN HEALTH BEHAVIORS DURING THE COLLEGE TRANSITION: THE ROLE OF SELF-COMPASSION

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Background: The transition to college represents a stressful time in a young adult's life and has been associated with adverse changes in diet and physical activity levels. Thus, there is need to enhance our understanding of factors that predict health behavior change during this transitional period. Recent research has demonstrated associations between self-compassion and engagement in health behaviors, explained at least in part by self-compassion's enhancement of self-regulatory processes. However, these relationships have yet to be tested longitudinally. The present study aimed to enhance our understanding of the relationship between self-compassion and health-promoting behaviors during the college transition as well as the potential mechanisms underlying this relationship. Specifically, we examined lower perceived stress, higher positive affect, and lower negative affect as potential mediators.

Methods: Participants were 157 first-year undergraduate students (mean age = 17.83; 79% female) who were administered self-report surveys of self-compassion at the beginning (T1) and end (T3) of their first semester of college, as well as daily diary questionnaires regarding stress appraisals and affect for one week during the first semester (T2).

Results: Results demonstrate that fruit and vegetable consumption increased from the beginning to the end of the first semester; $t(127) = -5.99, p < .01$. Higher self-compassion at the beginning of the semester predicted increased fruit and vegetable consumption at the end of the semester ($\beta = .20, p < .05$), controlling for fruit and vegetable consumption at the beginning of semester. Self-compassion was not, however, associated with end-of-semester physical activity. Further analyses revealed that the relationship between self-compassion and fruit/vegetable intake was not mediated by T2 average levels of stress appraisal, positive affect, or negative affect, as has been previously hypothesized.

Conclusion: These findings suggest that higher self-compassion predicts more engagement in some aspects of health-promoting behavior (but not all) over the transition to college. Further, the mechanisms underlying this relationship remain unclear. Future research to further examine these relationships are needed. Interventions that target enhanced self-compassion may increase engagement in health behaviors over the transition to college.

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CORRELATES OF SKIN SELF-EXAMINATION AND SUN PROTECTION BEHAVIORS AMONG MELANOMA SURVIVORS

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Introduction: Melanoma survivors are at increased risk for cancer recurrence and second primary melanomas. Regular skin self-examination (SSE) could reduce melanoma morbidity and mortality. Engaging in sun protection (e.g., shade seeking) is also recommended for melanoma survivors.

Aims: To examine the prevalence and correlates of SSE and sun protection among melanoma survivors.

Methods: Patients (N=441) with stages 0-III melanoma who were 3–24 months post-surgery and non-adherent to either SSE or sun protection recommendations completed an online survey measuring demographics, medical, skin cancer risk and psychological factors, knowledge and attitudes about melanoma, social influence, attitudes toward sun protection behaviors and SSE, and sun protection behaviors. Patients reported whether they checked any part of their body for skin cancer in the last two months. SSE comprehensiveness was assessed based on the number of body parts examined out of 15. The sun protection index was the mean of the following items with responses from 1–5: using sunscreen with a sun protection factor of ≥ 30 , wearing a long-sleeved shirt, wearing a wide-brimmed hat, and staying in the shade when outside on a sunny day. Multiple regression analyses were conducted to evaluate correlates of SSE (performance and thoroughness) and sun protection.

Results: About 66% of participants reported conducting SSE in the past two months; however, only 7.5% reported examining all 15 body parts. Greater worry about recurrence, fewer perceived barriers to SSE, more planning, and higher SSE self-efficacy were positively associated with both SSE performance and SSE comprehensiveness ($ps < .01$). Higher perceived risk of recurrence and physician influence were associated with greater SSE performance, and education and sex were associated with SSE comprehensiveness ($ps < .05$). Education was also positively associated with sun protection behaviors ($p < .01$). Greater physician's recommendation, higher injunctive norms, fewer perceived barriers, and higher protection self-efficacy were associated with sun protection behaviors ($ps < .05$).

Conclusions: Many melanoma survivors do not engage in comprehensive SSE or sun protection. By identifying the correlates of these behaviors in melanoma survivors, this study provides insights for improving SSE and sun protection by targeting specific constructs (e.g., barriers and self-efficacy) in future skin cancer interventions.

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CLASSIFICATION OF TECHNIQUES USED IN SELF-DETERMINATION THEORY BASED BEHAVIOR CHANGE INTERVENTIONS IN HEALTH CONTEXTS

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While evidence suggests that interventions based on self-determination theory can be effective in motivating adoption and maintenance of health-related behaviors, and in promoting adaptive psychological outcomes, the motivational techniques that comprise the content of these interventions have not been comprehensively identified or described. The aim of the present study was to develop a classification system of the techniques that comprise self-determination theory interventions, with satisfaction of psychological needs as an organizing principle. Candidate techniques were identified through a comprehensive review of self-determination theory interventions and nomination by experts. The study team developed a preliminary list of candidate techniques accompanied by labels, definitions, and function descriptions of each. Each technique was aligned with the most closely-related psychological need satisfaction construct (autonomy, competence, or relatedness). Using an iterative expert consensus procedure, participating experts (N=18) judged each technique on the preliminary list for redundancy, essentiality, uniqueness, and the proposed link between the technique and basic psychological need. The procedure produced a final classification of 21 motivation and behavior change techniques (MBCTs). Redundancies between final MBCTs against techniques from existing behavior change technique taxonomies were also checked. The classification system is the first formal attempt to systematize self-determination theory intervention techniques. The classification is expected to enhance consistency in descriptions of self-determination theory-based interventions in health contexts, and assist in facilitating synthesis of evidence on interventions based on the theory. The classification is also expected to guide future efforts to identify, describe, and classify the techniques that comprise self-determination theory-based interventions in multiple domains.

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EFFECTS OF SOCIAL COMPARISON ORIENTATION ON OUTCOMES IN ADULTS ENROLLED IN A GROUP-BASED BEHAVIORAL WEIGHT LOSS INTERVENTION

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Risks associated with obesity are great. As such, it is crucial to understand factors that may affect weight loss. *Social Comparison Theory* suggests that individuals compare themselves with others to learn about, and therefore improve, the self. Group-based behavioral weight loss (GBWL) interventions afford a unique opportunity for social comparison among group members. Previous studies have shown that weight-focused social comparisons are associated with treatment outcomes in GBWL interventions, though the direction of such findings vary across outcomes. Likewise, it remains unclear how individual variation in one's *trait-like* tendency to socially compare (Social Comparison Orientation; SCO) may impact treatment adherence and weight loss outcomes. This study examined the association between baseline SCO and treatment adherence and outcomes in a GBWL intervention. It was hypothesized that a stronger SCO at baseline would be associated with physical activity adherence, self-monitoring, group attendance, assessment completion, and weight loss at end of treatment (12 months).

This study was a secondary data analysis of a trial testing the efficacy of lay health coaches in GBWL. Participants (N=278, 75.90% female, age 51.83±5.61 years, BMI 34.70±3.34 kg/m²) completed a 12 month GBWL intervention. The Iowa–Netherlands Comparison Orientation Measure and the Paffenbarger Questionnaire measured SCO and physical activity, respectively. Self-monitoring, group attendance, assessment completion, and weight were objectively assessed.

SCO findings were mixed. Stronger SCO at baseline was associated with worse physical activity outcomes during treatment (p=.04). However, stronger SCO also predicted better group attendance (p=.05) and assessment completion at 12 months (p=.03). SCO did not predict self-monitoring or weight loss.

Findings indicate that individual differences in SCO may differentially influence treatment outcomes. While stronger SCO may improve socially salient behaviors (e.g., group attendance and assessment completion), SCO may have no effect, or even a detrimental effect, on behaviors that are more individually motivated (e.g., physical activity, self-monitoring, and weight loss). Future research may consider how best to capitalize on variations in SCO early in treatment to improve critical weight loss behaviors over the course of the intervention.

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DELIBERATE IGNORANCE: PEOPLE AVOID MONITORING THEIR WEIGHT-LOSS PROGRESS

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Background: Self-weighing, a monitoring behavior common in many weight-loss interventions, entails daily, weekly, or monthly tracking of one's body weight. Compared to tracking diet or physical activity, frequent self-weighing is more predictive of successful weight-loss. Despite its effectiveness for weight-loss, we predicted that some people will avoid self-weighing even when trying to lose weight because they anticipate negative information—the scale will reveal that they have not lost weight.

Purpose: In two experiments with people trying to lose weight ($n = 774$), we assessed how negative expectations relate to avoiding the scale.

Methods: In Study 1, participants recalled a time they thought about stepping on a scale and either stepped on the scale (seeking condition) or avoided the scale (avoidance condition). Then they answered a question about their expectation about their weight-loss at that time. In Study 2, we directly assessed avoidance by asking participants to imagine either expecting that they had lost weight (positive expectations condition) or gained weight (negative expectations condition).

Results: Avoidance was common, with 81% of participants in Study 1 ($n = 408$) reporting that they had avoided the scale at some point, and 27.5% of participants ($n = 112$) avoided the scale more than 15 times in the last six months. In addition, negative expectations were linked to avoidance. In Study 1, participants who recalled avoiding self-weighing, compared with people in the seeking condition, expected to receive more negative information about their weight-loss progress (adjusted Welch's $t(480.90) = 7.90, p < .001$; Cohen's $d = .70$). In Study 2, participants reported lower intentions to step on the scale if they imagined that they expected to receive negative feedback about their weight-loss progress than if they imagined that they expected to receive positive feedback about their weight-loss progress (adjusted Welch's $t(209.40) = 4.83, p < .001$; Cohen's $d = .69$).

Conclusions: Avoiding self-weighing appears commonplace even among people trying to lose weight, and stems from negative expectations about one's weight-loss progress.

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THE ROLE OF EXECUTIVE FUNCTIONS IN A BEHAVIORAL WEIGHT LOSS INTERVENTION DESIGNED FOR EMERGING ADULTS

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Executive functions encompass higher-order cognitive processes such as working memory, cognitive flexibility, and inhibitory control. Such abilities represent critical underpinnings of behavior change, which requires complex cognition in the form of goal-setting, implementation planning, problem-solving, and self-regulation. Further, weight loss requires behavior change across multiple domains; thus, attempting to lose weight places a high demand on executive functions. Executive functions develop with maturation of the frontal lobe, continuing throughout emerging adulthood. Historically, emerging adults (EA) fare worse than other adults in behavioral weight loss (BWL)—perhaps due in part to still-developing executive functions. The aims of this secondary analysis were to assess rates of executive dysfunction in a sample of EA presenting for BWL treatment and to determine whether executive dysfunction predicted 6-month outcomes. The Behavior Rating Inventory of Executive Function-Adult (BRIEF-A) was administered at baseline to participants (ages 18–25; BMI 25–45 kg/m²) enrolled in a 6-month BWL program. Weight, waist circumference, and body fat percentage were assessed in clinic at baseline and 6-months. Participants ($N=72$, 84.7% female, 68.1% racial/ethnic minority, baseline BMI=32.9 + 4.4) attended 1 in-person group session and 1 in-person individual session, followed by a technology-mediated program with semi-automated e-coaching. Number of clinically-elevated subscales (T-score >65) on the BRIEF-A ranged from 1 to 9, with 27.8% of participants endorsing executive dysfunction in at least 1 domain. The most commonly elevated subscale was planning/organization ($n=9$; 12.5%). Endorsement of one or more clinically elevated subscales on the BRIEF-A did not predict percent weight change ($F=0.00, p=.99$), change in body fat percentage ($F=0.15, p=.70$), or change in waist circumference ($F=0.24, p=.63$) at 6-month follow-up. More than one quarter of EA presenting for a BWL program endorsed clinically significant executive dysfunction in at least one domain. However, this does not appear to have influenced their success with respect to 6-month outcomes. Interpretation of these findings is limited by small sample size and lack of performance-based executive function assessment. While the BRIEF-A may hold greater external validity because it assesses executive functions in daily life, performance-based assessments may better capture EA capacity for executive functioning.

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BASELINE PSYCHOSOCIAL AND DEMOGRAPHIC FACTORS ASSOCIATED WITH STUDY ATTRITION AND 12-MONTH WEIGHT GAIN IN THE DIETFITS TRIAL

Priya Fielding-Singh, PhD¹¹Stanford Prevention Research Center, Menlo Park, CA**Objective:** The purpose of this study was to examine correlates of failure—trial attrition and weight gain—in a randomized clinical weight loss trial.**Methods:** The Diet Intervention Examining The Factors Interacting with Treatment Success (DIETFITS) trial included 609 adults (18–50 years; BMI 28–40). Participants were randomized to a 12-month Healthy Low-Fat or Healthy Low-Carbohydrate diet for weight loss. At baseline, participants completed psychosocial, demographic, and anthropometric measures. Stepwise logistic regressions identified baseline factors associated with 1) study attrition and 2) among trial completers, weight gain at 12 months.**Results:** Having higher baseline food addiction and self-efficacy were linked to treatment failure. Being younger, not having a college education, having higher outcome expectations and quality of life, and lower social functioning and self-control increased the odds of trial attrition. Identifying as other than non-Hispanic White, not being married or cohabitating, having higher cognitive restraint and self-control, and lower amotivation, family encouragement, and physical limitations increased the odds of gaining weight by treatment's end.**Conclusions:** Participants' baseline psychosocial and demographic factors may support or impede successful weight loss. Trialists should attend to these factors when designing treatments in order to promote participants' likelihood of completing the trial and achieving their weight loss goals.

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SOCIOECONOMIC CONTRIBUTORS TO UNDERGOING BARIATRIC SURGERY AND POST-SURGICAL WEIGHT LOSS

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SMALL CHANGES FOR WEIGHT LOSS IN AFRICAN AMERICAN CHURCHES: A SUCCESSFUL TRANSLATION

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Background: African American churches have been identified as a promising venue to deliver weight management and other health promotion programs to reach underserved congregants and reduce disparities between racial groups. Few programs have tested a participant-centered “small changes” approach to weight loss to engage congregants in lifestyle changes that could be sustained long-term. This “small changes” approach has previously been successful in other difficult-to-reach populations. The purpose of this study was to test whether a previously-successful small changes weight loss program could be translated for use in African American churches.

Methods: The HEAL (Healthy Eating & Active Living) program was delivered via 12 face-to-face group sessions held weekly at a partner church in Chicago's West Side: a segregated, predominately African American region. Sessions were co-led by a researcher and a church partner. The program encouraged participants to make a minimum of six small 100-calorie changes per day to their usual eating habits while also increasing their physical activity. The program was evaluated in a one-group design including assessments at baseline, after program completion (3-month), and after three additional months with no contact (6-month). Wilcoxon signed rank sum tests were used to assess change in weight, waist circumference, hemoglobin A1c, and blood pressure between baseline and the follow up assessments. Significance was set at $p < 0.01$ due to the small sample size.

Results: Seventeen African American congregants from five partner churches participated in the study (16 women, age 57.5 ± 12.1 years, BMI $36.5 \text{ kg/m}^2 \pm 5.4$, A1c 6.3 ± 0.5 , blood pressure $132 \pm 14/82 \pm 7$). Participants attended an average of 77% (mdn=9 of 12) of treatment sessions and 94% and 100% completed the 3 and 6-month assessment visits. Reductions (all p 's < 0.01) were observed during the 3- and 6-month assessments for weight (3 mo. mdn=-2.6 kg; 6 mo. mdn=-2.6 kg), waist circumference (3 mo. mdn=-3.8; 6 mo. mdn=-5.1), and A1c (3mo. mdn=-0.5; 6 mo. Mdn=-0.3). Among those with elevated blood pressure at baseline, there were significant reductions in systolic (3 mo. mdn=-10.7 mmHg) and diastolic blood pressure (3 mo. mdn=-8.0) but at 3 months but not at 6 months. The program was well received by participants with 100% reporting they “definitely would” recommend the program to others at their church and 94% reporting they were “somewhat” or “very satisfied” with the program.

Conclusion: The small changes approach to weight loss was successful in producing moderate sustained weight loss and was well received by participants. This translation study suggests that programs emphasizing small changes is a promising approach for use in African American churches and is appropriate for testing with a larger sample.

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EXPLORING FEMALE CANCER SURVIVORS' IDEAS FOR A MULTI-GENERATIONAL DIGITAL LIFESTYLE INTERVENTION

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Background: Given the high rates of obesity, an established risk factor for at least 13 cancers, promoting healthy lifestyle behaviors is imperative to reducing the risk of cancer. Our long-term goal is to develop a multigenerational digital health intervention aimed at helping overweight/obese female cancer survivors improve their diet, increase physical activity, and manage their weight by empowering them to promote healthy lifestyle behaviors in their at-risk (e.g., physically inactive) adult children and grandchildren. The Integrate, Design, Assess, and Share (IDEAS) framework was used to guide our intervention development process. The purpose of our iterative study was to explore the ideas of racially/ethnically diverse female cancer survivors regarding a multigenerational lifestyle intervention.

Methods: Participants were 21 randomly selected racially/ethnically diverse overweight/obese grandmothers with breast, endometrial, or ovarian cancers from a larger sample that had previously participated in a psychosocial survey regarding their lifestyle behaviors, family structure, and mobile device use (7 Hispanics, 7 non-Hispanic blacks, 7 non-Hispanic whites; 65.5 ± 1.2 years old; BMI = 31.2 ± 1.0). Participants completed semi-structured interviews either in Spanish ($n=5$) or English ($n=16$). The interview guide was designed to: (a) better understand their family relationships, weight-related challenges, motivation to prevent obesity and/or cancer in their family members, and (b) elicit feedback on preliminary intervention paper mockups developed using behavioral, motivational, and family systems theories. Interviews were audio-recorded, transcribed, and analyzed using a general inductive approach.

Results: Seven key themes emerged: (1) importance of familial support; (2) preference for local family members involvement; (3) survivors' internal strengths and positive mindset; (4) weight loss struggles and successes; (5) barriers and facilitators to maintaining healthy lifestyle behaviors; (6) access to reliable information on cancer risk; and (7) family motivation through reinforcing activities. Participants also expressed their openness to using technology, their excitement about the intervention, and several suggestions related to intervention topics and aesthetic features (e.g. general child health, ways to strengthen family relationships, enhancing icon aesthetics, adding/removing some features).

Conclusions: Understanding end users' needs and preferences to inform the development of a digital health intervention is fundamental. Input from female cancer survivors in the present study is being used to outline intervention content, develop a fully functioning prototype, and conduct a feasibility randomized pilot trial that addresses health behaviors in at-risk multigenerational families from diverse racial/ethnic backgrounds.

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IS SLEEP THE ANSWER TO CHILD OBESITY? COST-EFFECTIVENESS OF A SLEEP INTERVENTION IN INFANCY

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Our recent randomised controlled trial (RCT) demonstrated that children who received a brief sleep intervention during the first two years of life had just half the risk of obesity at 5 years of age as those who did not receive the sleep intervention. The aim of this analysis was to determine whether early sleep intervention provides a cost-effective option to reducing the burden of child obesity. The RCT included 192 mother/infant dyads randomised to the sleep intervention and 209 control dyads who received usual care. The sleep intervention involved one antenatal group-based education session aiming to set realistic expectations around sleep, and one individualised home visit when infants were around 3 weeks of age, which encouraged parents to help their child learn how to self-settle themselves to sleep, and to avoid using feeding as the first response to infant distress. Those who identified their child as having problems with their sleep were offered additional help. Measures of body mass index (BMI) were obtained at 2 and 5 years of age. Economic evaluation from a health funder perspective was undertaken with intervention costs per child valued in 2018 Australian dollars. The primary effectiveness outcome was difference in quality-adjusted life years (QALYs) between intervention and control, modelled to age 15 years. Cost and QALYs were used to calculate an incremental cost-effectiveness ratio (ICER). ICERs were also determined for the difference in BMI at age 5 years and modelled to age 15 years. The intervention cost was \$186 per child. The ICER was \$18,204 per QALY gained (95% CI \$4,126 to \$536, 527). Group differences in BMI were -0.18 kg/m² (-0.37 to 0.05) at 5 years (measured), and -0.26 kg/m² (-0.52 to 0.03) at 15 years (modelled). ICERs were \$1,021 (\$482 to \$9,430) and \$536 (\$156 to \$8,040) per BMI unit avoided, respectively. The sleep intervention demonstrated long-term benefits to BMI and was deemed cost-effective at accepted cost/QALY thresholds (< \$50,000) suggesting that early sleep intervention offers a viable approach to obesity prevention in young children.

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PSYCHOLOGICAL PREDICTORS OF OUTCOMES FOLLOWING 12-MONTH PRIMARY CARE BEHAVIORAL WEIGHT LOSS INTERVENTION

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Background: Obesity is prevalent in primary care settings (PC), and novel approaches are needed to help address this significant health problem. Current research findings for predictors of weight loss (WL) and treatment attrition are inconsistent and treatment guidelines are lacking. Therefore the aim of this study was to identify possible multivariate predictors of WL and attrition in PC patients participating in a 12-month behavioral weight loss intervention.

Methods: PC patients with obesity ($N = 166$, $M_{age} = 50$ years, 81.3% female, $M_{BMI} = 35.3$) completed baseline measures of demographic and psychological variables before attending weekly weight loss intervention groups for three months, biweekly groups for three months, then monthly groups for six months. Percent total WL (%WL) was assessed at 12-months for intervention completers ($n = 106$, 62.6%). Early attrition was defined as less than 3-month completion ($n = 61$, 37.4%). Confirmatory factor analysis (CFA) was conducted to examine underlying structure of predictors and reduce the number of variables before using multivariable models. CFA was utilized to test four psychological factors based on baseline self-report psychological questionnaires. Sample independent model fit statistics revealed good fit for four factors with a Root Mean Square Error of Approximation (RMSEA) of 0.09: Eating Behaviors (e.g., food addiction, binge eating), Mood (e.g., depression, anxiety), Social Support (e.g., frequency, helpfulness), and Psychosocial (e.g., alcohol use, childhood abuse).

Findings: Average weight loss at 3-months was 2.9 kg ($sd = 3.3$) and 3.5 kg ($sd = 6.5$) at 12-months. Of the four constructed factors, only Social Support significantly predicted 3-month weight loss ($p = .01$) while Eating Behaviors, Mood, and Psychosocial were not predictive of weight loss at 3- or 12-months ($ps > .05$). No factors significantly predicted treatment attrition ($ps > .05$).

Discussion: Results suggest that baseline eating behaviors, mood, and history of psychosocial factors may not significantly impact WL outcomes or risk of early attrition in individuals seeking intensive behavioral weight loss intervention in the primary care setting. However, perceived helpfulness and frequency of social support for weight loss may impact behavioral weight loss outcomes. Future research is needed to continue tailoring weight loss interventions for individuals at high risk for poor outcomes and early attrition.

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ADOLESCENT SELF-MONITORING IS ASSOCIATED WITH WEIGHT LOSS WITHOUT INCREASING DISORDERED EATING IN OBESITY TREATMENT

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Self-monitoring of dietary intake is a key component of behavioral weight loss (BWL) treatment, as it helps to inform the self-regulation process. Although adherence to self-monitoring is associated with greater weight loss in adults, recent pediatric guidelines highlighted that there is insufficient evidence determine the effectiveness for adolescents. Further, it is unknown if logging calories might increase disordered eating symptoms among high-risk adolescents. This study examined self-monitoring behaviors of adolescents with obesity enrolled in a 4-month(m) BWL intervention (TEENS+) and the relations to treatment outcomes and eating disorder symptoms. Adolescents ($N = 81$; M age = 13.7; 63% female; 55% racial/ethnic minority; M baseline body mass index [BMI] = 34.8 kg/m²) attended weekly group treatment sessions that taught strategies to achieve weight loss via adherence to dietary and exercise goals. Adolescents were taught to self-monitor weekly (via paper log or app) and reinforced for completion (4/7 days). Coaches provided feedback and taught adolescents how to use the log data and weight change to engage in self-regulation to reach weight loss goals. Out of 15 possible weeks to self-monitor, participants completed a log ~67% of the time ($SD = .29$). Greater adherence to self-monitoring was associated with greater BMIΔ from baseline to 2m ($r = -.46$; $p = .001$), 4m ($r = -.37$; $p = .002$), and 7m (no-contact maintenance phase; $r = -.26$; $p = .042$). Self-monitoring was not associated with changes in disordered eating (Eating Disorder Examination Questionnaire; Δ from baseline to 4m; $p = .848$). Most adolescents used an app or website to look up calories (55%). Paper logs were primarily used (78%) but at post, 55% of adolescent reported trying an app to log. At post, 39.1% of participants reported self-monitoring was “hard/very hard” and 35.9% reported that it was “easy/very easy.” There were no differences in perceived difficulty of self-monitoring ($p = .131$) or 4m BMIΔ ($p = .803$) based on type of log (paper vs app). Most parents (52.4%) at least “sometimes” helped their teens log; however, there was association with self-monitoring frequency ($p = .07$). Consistent with self-regulation theory, self-monitoring was associated with greater adolescent BMI decreases and was not associated with increased disordered eating. Self-monitoring appears important for adolescent weight loss, but more research is needed to better understand how to optimize use of this strategy within BWL treatment.

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COLLEGE STUDENTS' MEAL PLAN USE IS ASSOCIATED WITH WEIGHT GAIN

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Background: In the US, first year university students are typically required to live on campus and purchase a meal plan. Students' meal plans typically include either a set number of entries, or unlimited entries, to an all-you-can-eat dining hall. First year students typically gain 1–2 kg during their first year, however the reasons for this weight gain are still unclear. This study examined if the number of meals students used from their meal plan was associated with weight gain, and if students with higher dietary quality gained less weight.

Design: Students' objective meal plan use was obtained from the university. Students' Body Mass Index (BMI) was measured by trained research assistants at the start and end of the Fall and Spring semesters. Students fruit and vegetable intake, and added sugar intake, were obtained from a Dietary Screener Questionnaire (DSQ) survey completed at the start and end of the Fall and Spring semesters.

Participants/Setting: Students ($n=526$; 46% non-Hispanic White, 38% Pell Grant recipients) from a large, public, southwestern university were recruited during 2015–2016 from on-campus residence halls.

Statistical analyses performed: Linear mixed-effects models were used to examine if meal plan use was associated with students' BMI at the end of the semester, after controlling for students BMI at the start of the semester, semester, student demographics, and multiple responses for some students. A linear mixed-effects model was then used to determine if dietary quality was associated with weight gain. Students BMI at the end of the semester was predicted by students' dietary quality, after controlling for meal plan use and BMI at the start of the semester, semester, student demographics, and multiple responses for some students.

Results: For every 10 meals used during the semester, students were anticipated to gain 0.03 kg/m² (99% CI=0.01, 0.05) during that same semester. There was no indication that dietary quality (fruit and vegetables, added sugar intake) was associated with weight gain or weight loss.

Conclusions: Meal plan use appears to be associated with first year college students' weight gain

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INFLUENCE OF RACE, ANXIETY SENSITIVITY, AND BODY FAT ON FEAR RESPONSE DURING EXERCISE AMONG ADULTS WITH OBESITY

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Background: Obesity is a major public health concern especially among African Americans (AAs) who experience disproportionately higher rates of obesity compared to European Americans (EAs). AAs are also less likely than EAs to lose weight in weight loss interventions, possibly due to less interest in physical activity. Anxiety sensitivity (AS; i.e., fear of anxiety and of physiological sensations that occur with heightened arousal) may contribute to reduced physical activity among AA adults who may be especially sensitive to physiological symptoms that accompany anxiety. This study explored the degree to which AS and body fat are associated with fear during exercise; and the extent to which this effect may be more pronounced in AAs than EAs.

Methods: AA (n=30) and EA (n=34) participants (84.4% women; mean age = 43.4 ± 13.9 years) with obesity (BMI ≥ 30) were recruited from the community and from among patients enrolled in a university-based weight loss program. Participants completed the Anxiety Sensitivity Index-3 and height and weight were measured. All participants completed two study conditions (i.e., exercise and reading activity). During the exercise condition participants walked/ran for 20 minutes on a treadmill at an intensity of 70% of age-predicted maximum heart rate reserve. Participants provided ratings every four minutes of current state of distress or fear. Hierarchical regression was used to evaluate the relationship of race, body fat, and AS (total and physical subscale score) on fear response in the exercise condition.

Results: Results indicated a significant three-way interaction of race, the physical subscale of AS, and BMI in predicting fear response to exercise ($\beta = 0.70$, $p=0.040$). Among EAs, higher BMI and physical AS scores predicted greater mean fear during exercise but, surprisingly, for AAs fear scores appeared relatively constant regardless of BMI.

Conclusion: Results confirmed a significant interaction of race, physical AS, and BMI in predicting fear during exercise, but not in the expected direction. There appeared to be no effect of AA race on fear response to exercise, and the effect in EAs was only apparent in participants with more extreme obesity. These preliminary data suggest that racial differences exist in fear response during exercise. Future research should further explore the effects of race and anxiety sensitivity on fear response among individuals with obesity, especially among EAs.

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A SYSTEMATIC REVIEW OF THE DOSE-RESPONSE RELATIONSHIP BETWEEN USAGE AND PHYSICAL ACTIVITY IN ONLINE WEIGHT-LOSS INTERVENTIONS

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Background: Regular physical activity is critical to managing obesity. Recent studies have shown that online physical activity interventions can be an effective strategy to manage weight loss. However, the dose-response relationship between online intervention usage and improvements in physical activity outcomes is not well studied. Previous studies have shown that only certain usage metrics (e.g. percent of content accessed) were associated with improvements in psychological outcomes. Understanding the dose-response for physical activity intervention will be important for designing and evaluation of future interventions.

Objective: 1) Examine the types of intervention usage metrics for web-based weight loss interventions aimed to promote physical activity; 2) explore which usage metrics of online interventions were reflective of changes in physical activity behaviours.

Methods: We conducted a systematic review following the PRISMA guidelines to examine the dose-response relationship of web-based interventions targeting physical activity. We used the following keywords: web OR internet OR online OR ehealth AND physical activity OR exercise, AND dose OR dose-response OR usage data AND obesity OR weight*. Peer-reviewed articles published between 2006–2019 were included.

Results: A total of five articles met the inclusion criteria. The mean interventions length was 10±6 months (range 2–30 months). The most commonly usage metrics was login rates (n=5; 100%), followed by time per login (n=2; 40%) and percentage of tasks completed (n=1; 20%). The mean login rates, time per login and percentage of tasks completed of high-dose participants were 64±13%, 9±5.6min, 46%, respectively. Increase in intervention usage measured by login rates, timer per login and percentage of tasks completed were all correlated with a greater improvement in physical activity behaviours.

Conclusion: Our findings suggest that capturing login rate, timer per login and percentage of tasks completed were important usage metrics for evaluating dose-response relationships for online weight-loss interventions. More research is needed in this area to better understand the relationship between intervention usage and improvements in physical activity outcomes. Future studies need to examine whether online interventions have a usage saturation point where no further therapeutic benefit may be obtained.

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BINGE EATING PREDICTS ADHERENCE TO DIGITAL SELF-MONITORING DURING BEHAVIORAL WEIGHT LOSS

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Consistent self-monitoring (SM) of eating, weight, and physical activity (PA) predicts better outcomes during behavioral weight loss (BWL), but the factors that influence SM adherence are not well understood. Some prior research suggests that disinhibited eating and binge eating predict worse adherence to dietary SM, possibly due to shame or avoidance. However, this previous research was not conducted with digital food logging, which allows for more objective measurement of adherence, and which can differ from analogue SM in important ways, such as convenience, accessibility, and discreetness. Additionally, no prior research has examined how binge eating and related constructs predict SM of weight or PA during BWL.

This study examined predictors of adherence to digital SM during a 12-week BWL program. Adult participants ($N = 77$) were instructed to self-monitor their eating, PA, and weight using digital devices (food log via mobile app, Fitbit Flex, and wireless "smart" scale). Adherence to SM, assessed objectively using data captured from the three devices, was calculated as the percent of days during treatment that SM was completed (SM of eating was considered complete if ≥ 800 calories were logged). Baseline binge eating (BE) severity was assessed using the Binge Eating Scale and uncontrolled eating (UE) and emotional eating (EE) were assessed using the revised Three Factor Eating Questionnaire. Non-parametric correlations were conducted due to non-normal distributions of SM variables. Sex, race, age, and baseline BMI were considered as covariates, and significant covariates were controlled for in subsequent analyses.

Spearman rank correlations controlling for race revealed that greater BE severity at baseline predicted greater adherence to SM of weight, $\rho = 0.25$, $p = .03$, and SM of eating, $\rho = 0.25$, $p = .03$. BE severity did not predict adherence to SM of PA, $\rho = 0.08$, $p = .50$. Baseline UE and EE did not significantly predict SM adherence.

In contrast to previous research, this study found that participants with greater BE severity at the start of BWL had better adherence to SM of eating, and for the first time established a relationship between BE and digital SM of weight in BWL. Future studies should determine if there are features of analogue versus digital dietary SM that may explain this pattern of findings, and also examine these associations over multiple timepoints and in relation to BWL treatment outcomes.

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BARIATRIC PATIENT TREATMENT AND TRANSPORT: EMERGENCY MEDICAL WORKERS' ATTITUDES AND CHALLENGES

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Background: Emergency medical services workers (EMS; e.g., paramedics, firefighters, emergency medical technicians) are frequently tasked with treating and transporting bariatric patients. They are also often the first provider a patient encounters during an emergent medical interaction. Nurses, physicians, medical students, and even obesity experts have been found to hold generally negative attitudes toward patients with obesity (Phelan, Burgess, Yeazel, Hellerstedt, Griffin, & van Ryn, 2015). However, little or no research has assessed EMS workers' experiences with and attitudes toward bariatric patients. Thus, the present study sought to 1) measure EMS workers' attitudes toward bariatric patients and 2) assess whether negative attitudes were associated with demographic variables such as years of experience and level of training.

Methods: Randomized, stratified, cluster sampling was used to recruit EMS workers ($N = 208$) from a diverse range of communities. Their attitudes toward people with obesity were measured with the Universal Measure of Bias questionnaire (UMB; Latner, O'Brien, Durso, Brinkman, & MacDonald, 2008). They reported their experiences with bariatric patients via open-ended questions.

Results: Negative attitudes and beliefs about bariatric patients were found including comments on patients' hygiene, lack of willpower, and inappropriate over-use of emergency medical services. However, a majority of EMS workers reported feeling comfortable (86%) and well-trained (78%) in treating bariatric patients. EMS workers' attitudes toward bariatric patients were not associated with their level of training or years of work experience (all $ps > .05$). EMS workers' attitudes toward people with obesity in general, as measured by the UMB were similar to other healthcare worker samples ($M = 3.22$, $SD = .89$). The most frequent challenges faced by EMS workers included injuries during lifting (28%) and a related lack of appropriate personnel (25%) and equipment (18%). Some negative attitudes and beliefs about bariatric patients were found as represented by comments on patients' hygiene, willpower, and inappropriate over-use of emergency medical services. A majority of EMS workers reported feeling comfortable (86%) and well-trained (78%) in treating bariatric patients. EMS workers' attitudes toward bariatric patients were not associated with their level of training or years of work experience (all $ps > .05$).

Discussion: The findings of this study suggest that 1) improved access to resources for patient care has the potential to help both EMS providers and bariatric patients and 2) EMS workers are similar to other health care providers in terms of their attitudes toward bariatric patients. Future directions include comparative analysis of attitudes toward other groups of patients that present similar transportation challenges such as those with physical disabilities.

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A LATENT TRANSITION ANALYSIS OF ECOLOGICAL CHARACTERISTICS OF FAMILIES IN A TRIAL TO PREVENT EXCESS WEIGHT GAIN

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Introduction: The high prevalence of elevated Body Mass Index (BMI) in childhood poses dangers to children's short and long-term health. Racial/ethnic minority children have significantly higher prevalence of pediatric obesity compared to White children yet little is known about distinct social-ecological differences (e.g., interpersonal relationships, family environment) among children with elevated BMI and their importance as targets for tailored family-based interventions.

Methods: We examined 240 racially diverse children ages 5 to 13 with BMI $\geq 85^{\text{th}}$ percentile, and their caregiver(s) in a randomized trial of the Family Check-Up 4 Health (FCU4Health) for prevention of excess weight gain. A latent profile analysis first identified three unique profiles—Worst Behaviors (WB), Intermediate Behaviors (IB), and Better Behaviors (BB)—that were collectively differentiated on the variables: Family Health Routines (Media, Mealtime, Sleep), Parent Health Behaviors, Parenting Skills, Child Physical Activity, Child Eating Behaviors, and Child Dietary Choices. A latent transition analysis was run to examine whether class membership changed from Baseline (T1) to 6 months post-randomization (T2), and whether intervention assignment predicted transitions. FCU4Health was delivered during this 6-month period.

Results: At T1, there were 116 families in IB, 96 in WB, and 28 in BB. Of the 96 families in WB at T1, 64 stayed, and 32 transitioned to IB at T2. Of the 116 families in IB at T1, 99 stayed, 5 transitioned to WB, and 12 transitioned to BB. Of the 28 families in BB at T1, 23 stayed, 4 transitioned to Class IB, and 1 transitioned to Class WB. In the FCU4Health group, 45% of families in WB at T1 transitioned to IB at T2 (compared to 21% in the control group) and 8% of families transitioned from IB at T1 to BB at T2 (compared to 11% of families in the control group). Overall, 53% of families in FCU4Health transitioned to a healthier class compared to 32% in the control group.

Conclusions: Distinct profiles of child and family health behaviors and home environment variables existed among this largely homogenous sample of children with elevated BMI. FCU4Health was associated with transitioning to a healthier class compared to a services as usual control group, suggesting tailored interventions such as FCU4Health might be targeting salient obesogenic behaviors commensurate with the profiles identified. Research on tailoring is needed to test this hypothesis.

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ACCUULTURATION AS A PREDICTOR OF TREATMENT OUTCOME IN A CHILDHOOD OBESITY PREVENTION STUDY

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Introduction: Relative to other racial and ethnic groups in the U.S., Latinxs are disproportionately impacted by the obesity epidemic (Hales, Carroll, Fryar, & Ogden, 2017). Research on acculturation and obesity in Latinx children has shown a positive correlation between maternal acculturation toward mainstream U.S. society and obesity in preschool-aged children (Power, O'Connor, Fisher, & Hughes, 2015); however, few studies have explored the relationship between maternal acculturation and Latinx children's responses to obesity intervention (e.g. Fitzgibbon et al., 2011). This study examined this relationship in an early childhood (i.e. ages 2 to 4) obesity prevention study in Hartford, CT. We hypothesized that higher maternal ratings of acculturation toward Latinx heritage would predict greater child response to treatment (i.e. decrease or no change in BMI percentile).

Methods: Prior to the start of the primary care-based intervention program (Cloutier et al., 2015), a sample of predominantly Puerto Rican (i.e. 60%), Latinx caregivers (n=179) completed the *Brief Acculturation Rating Scale for Mexican Americans-II (Brief ARMSA-II)*, a 12-item questionnaire composed of items from the Anglo Oriented Scale (AOS) and Mexican Oriented Scale (MOS) of the ARMSA-II. Overall acculturation scores (i.e. AOS-MOS) as well as individual U.S. and Latinx acculturation scores were each analyzed as a possible predictor of child BMI percentile change from baseline to one-year follow-up.

Results: The low mean of the acculturation scores suggested that Latinx caregivers generally identified more with the Spanish language/their Latinx heritage than with the English language/mainstream U.S. culture ($\bar{x} = 0.76 \pm 2.10$). Overall acculturation significantly predicted BMI change ($\beta = -0.29$, $t = -3.32$, $p = 0.001$). The degree of identification with mainstream U.S. culture appeared to drive this effect ($\beta = -0.25$, $t = -2.30$, $p < 0.05$).

Discussion: Contrary to our hypothesis, caregiver identification with mainstream U.S. culture predicted better child participant response to treatment in the form of a decrease or no change in BMI percentile. These results suggest that the "Latino paradox" may manifest differently amongst Puerto Ricans relative to other Latinx populations with different historical relationships with the U.S. Future studies should include larger, more diverse samples of Latinx child-caregiver dyads to explore differences within this culturally heterogeneous ethnic group.

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ASSOCIATIONS OF MATERNAL WEIGHT, FEEDING PRACTICES, AND CHILD SELF-REGULATION OF INTAKE

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Objective: The continued increase in the prevalence of obesity in young children is concerning, as early obesity tracks into adolescence and beyond. Parental feeding practices are important for shaping children's development of self-regulation and, in turn, weight trajectories. Yet, there is limited research into how maternal weight status may relate to feeding practices and the child's early intake self-regulation. Thus, this observational cohort study examines the relationship of mother's body mass index (BMI) with maternal feeding practices and, in turn, infant food responsiveness (FR), satiety responsiveness (SR), and emotional overeating (EOE).

Methods: Hispanic mothers were recruited during pregnancy for the parent study. At 6 months postpartum, mothers' weight and height were measured and BMI was calculated. Maternal feeding practices (assessed with Infant Feeding Styles Questionnaire) and infant FR and SR (assessed with Baby Eating Behavior Questionnaire) were examined at 6 months. At 12 months, FR, SR, and EOE were assessed using the Child Eating Behavior Questionnaire. Spearman partial correlations were used to examine associations between maternal BMI and infant feeding practices at 6 months, and associations between infant feeding practices and infant FR, SR, and EOE. Models controlled for infant sex, birth BMI z-score, household income, and maternal age.

Results: A total of 153 mothers had complete data and were included in analyses. In separate models for maternal feeding practices at 6 months, higher BMI was associated with higher scores for restricting the amount the infant consumes (Spearman partial $r=0.17$, $P=0.04$), but lower scores for responsivity to infant satiety (Spearman partial $r=-0.21$, $P=0.01$). Restricting the amount the infant consumes was not associated with infant FR or SR at 6 or 12 months, but was associated with infant EOE at 12 months (Spearman partial $r=0.20$, $P=0.01$). Maternal responsivity to infant satiety cues was inversely associated with infant FR at 6 months (Spearman partial $r=-0.17$, $P=0.04$), but not 12 months (Spearman partial $r=-0.10$, $P=0.21$). Greater maternal responsivity to infant satiety cues at 6 months was significantly associated with lower infant EOE at 12 months (Spearman partial $r=-0.21$, $P=0.01$).

Conclusions: Mothers with excess weight may be more likely to engage in more restrictive and less responsive feeding practices which may affect infant self-regulation of intake. Parental feeding practices shape the early feeding environment and may be a potentially modifiable intervention target to improve the child's self-regulation and weight trajectory. Future studies examining the influence of parental weight status on feeding practices and child early self-regulation of intake are needed, as these may be important for shaping the child's future health.

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ASSOCIATION BETWEEN PAIN CATASTROPHIZING AND FREQUENT CRAVING FOR PRESCRIPTION OPIOIDS IN PATIENTS WITH CHRONIC PAIN

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The primary aim of this study was to characterize the association between pain catastrophizing and frequent opioid craving using a learning healthcare system in a sample of patients with chronic pain because craving is not a easily modifiable, but strong predictor for opioid misuse. Therefore, this study retrospectively reviewed the self-reported health status of adult patients seeking treatment at a tertiary pain clinic and endorsing prescription opioid use at their initial medical visit. The PROMIS® health and misuse item banks and pain catastrophizing scale (PCS) were administered. First, a MANOVA was conducted to compare the PROMIS measures and PCS scores among patients with varying frequencies of craving (never, rarely, and at least sometimes). Second, an ordinal logistic regression was conducted to examine the association between pain catastrophizing and frequent craving, and negative affect as an explanatory covariate for the association. Among a total of 288 patients (62% female), 67.6% endorsed 'no', 14.6% endorsed 'rarely,' and 17.7% endorsed 'sometimes or more frequent' craving. Patients endorsing craving at least sometimes demonstrated poorer functioning for all PROMIS health measures, more opioid misuse, and greater pain catastrophizing compared to patients endorsing 'no' or 'rarely' craving. Compared to the low levels of PCS scores (< 20), the moderate (20–29) and high (> 29) levels were associated with more frequent craving (OR = 2.3 and 2.8, $ps \leq .012$, respectively) above and beyond pain severity ratings. When entering negative affect as a covariate, the initially significant association was abolished ($ps > .288$), suggesting negative affect explained the association. In conclusion, poorer physical and psychosocial health status were evident in patients endorsing more frequent craving, and the positive association between pain catastrophizing and craving frequency was explained by negative affect. Therefore, pain catastrophizing, as a modifiable risk factor, may be a treatment target to reduce craving frequency through the reduction of negative affect.

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TRAUMA HISTORY, DEPRESSION, AND PAIN SEVERITY LINKED IN CHRONIC PELVIC PAIN

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This study from the Multi-Disciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network examines the relationships among baseline pelvic pain severity, baseline level of depression, childhood and recent trauma exposure (i.e., sexual trauma and physical violence) in patients with urologic chronic pelvic pain syndromes (UCPPS). The etiology of UCPPS is unclear and patients present with heterogeneous symptomatology. Previous research has demonstrated that chronic pelvic pain is associated with trauma history. Moreover, patients with UCPPS often have concurrent emotional distress (e.g., depression and anxiety). Psychosocial factors, including trauma exposure and depression, influence pain symptoms and quality of life for individuals with chronic pelvic pain. Therefore, investigating the relationships among psychosocial factors and pain experience is crucial for the care of these patients. Participants ranged from ages 18 to 82 ($M \pm SD = 43.4 \pm 15.1$ years). The sample, $N = 422$, was 54.7% female. Trauma was assessed with the *Childhood Experiences of Trauma Scale (CTES)* and the *Recent Experiences of Trauma Scale (RTES)*. This study is a secondary analysis of observational data. We analyzed the relationships among sexual trauma and experiences of physical violence, depressive symptoms, and pelvic pain severity. We conducted bivariate correlations for men and women separately. In men and women, baseline pelvic pain severity was associated with childhood sexual trauma ($r_M = .16, p < .05$; $r_W = .14, p < .05$) and baseline level of depressive symptoms ($r_M = .39, p < .001$; $r_W = .36, p < .001$). For women, there was also a small but significant relationship between baseline pelvic pain severity and recent physical violence ($r_W = .13, p < .05$). Overall, baseline pelvic pain severity was related to trauma history and symptoms of depression in individuals with chronic pelvic pain. UCPPS likely has multiple causal influences; the associations among pain, depression, and trauma suggest that these patients may benefit from treatment of emotional and trauma-related symptoms. These findings begin to shed light on the potential clinical implications of the integration of mental health screening assessments in urology and gynecology settings. Going forward, we plan to conduct a multivariable regression analysis as well as longitudinal exploratory analyses to further investigate the nature of these relationships (OSF Registration DOI: 10.17605/OSF.IO/K5JUF).

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DIMINISHED DISCLOSURE OF CHRONIC ILLNESS STATUS AMONG COLLEGE STUDENTS WITH FUNCTIONAL AND PAINFUL ILLNESSES

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Statement of Problem: College students with chronic health conditions may be at risk for lower social support given their health status and their developmental stage. Yet, little is known about how aspects of the chronic health condition (e.g., etiology of illness, extensiveness of pain) may influence the acquisition of social support in this group. This study assessed whether structural (i.e., number of friends disclosed to) and functional (i.e., perceived support following disclosure) social support differed as a function of illness etiology and pain symptomatology in a sample of undergraduates with chronic physical illness.

Subjects & Procedure: 121 students with varying chronic physical illness participated. Participants reported the number of friends to whom they had disclosed their chronic health condition and their perceived level of peer level of support following disclosure (on a 5-point Likert scale, with higher scores reflecting more support). Chronic health conditions were grouped based on etiology (functional v organic) and based on pain (pain present v no pain).

Results: A chi square test revealed no differences in etiology of illness or pain symptomatology as a function of age, race, ethnicity or biological sex, so none of these were included as covariates. Linear regressions revealed that individuals with functional illnesses ($M=7.30, SD=4.84$) disclosed to fewer friends than did those with organic illnesses ($M=13.25, SD=14.21, b = -.19, SE = .07, t = -2.66, p = .009, r^2 = .25$). Those with painful illnesses ($M=8.30, SD=5.82$) disclosed to fewer friends, $b = -.144, SE = .07, t = -2.09, p = .039, r^2 = .20$ than those without pain symptomatology ($M=13.16, SD=14.70$). There were no differences in perceived support following disclosure between those with functional ($M=3.24, SD=.85$) or organic illnesses ($M=3.49, SD=.71, b = .06, SE=.04, t=1.65, p=.102, r^2 = .16$) or between those with painful ($M=3.30, SD=.85$) or pain free illnesses ($M=3.48, SD=.71, b = .04, SE=.04, t=1.1, p=.274, r^2 = .11$).

Conclusion: College students with chronic physical illness of functional etiology and with painful symptomatology disclose their illness status to fewer friends than do those with organic or pain-free illnesses. However, they experience no less social support following the act of disclosure. This suggests that while individuals with functional and painful illnesses may anticipate poorer outcomes and greater stigmatization following disclosure, they receive social support comparable to peers with organic and pain-free illnesses following disclosure, potentially indicating a mismatch between anticipated and enacted stigmatization among this population. Future research is needed to understand the extent to which anticipated stigma may play a role in lower rates of disclosure, and whether lower rates of disclosure pose risks for psychosocial or disease self-management domains.

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DSM-5 EMERGING MEASURES USED IN PATIENT EDUCATION TO IMPROVE PAIN CARE AMONG VETERANS

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Objectives: According to the Institute of Medicine report from 2011, people who suffer from chronic pain have substantial unmet educational needs. Past research has also documented a strong association between chronic pain and psychopathology. Individuals who suffer from this comorbidity have been shown to have impaired recovery and experience further deterioration of psychiatric symptoms. Pain education programming has been found to create positive changes on mental health, specifically depression, and decrease functional disability. The purpose of the current pilot study was to determine whether participation in a pain education program would decrease symptoms on psychiatric and functional disability domains as measured by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) emerging measures.

Methods: A sample of 90 Veterans participated in the Pain Education School program at a Midwestern Department of Veterans Affairs (VA) Medical Center between November 1, 2013–October 31, 2014. All participants completed a pre- and post-education assessment which included the World Health Organization Disability Assessment Schedule and the DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure-Adult.

Results: Paired-samples t-tests were conducted to evaluate the impact of the pain education program on Veterans' scores. The current pilot study found a significant difference in depression ($p=.005$) and in mobility ($p=.000$), social participation ($p=.001$), and total functional disability scores ($p=.001$) upon completion of the pain education program.

Discussion: Findings offer support for the use of pain education programming and DSM-5 emerging measures to enhance clinical practice and decision-making in a Veteran population.

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A MIXED METHODS EXPLORATION OF ELECTRICAL STIMULATION IN VETERANS WITH FIBROMYALGIA SYMPTOMS & AFFECTIVE DISORDERS

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Introduction: Past research has shown that electrical stimulation has modest beneficial effects on symptoms of fibromyalgia, which is also commonly associated with anxiety and depression. The purpose of the current study was to evaluate the effectiveness and utilization of electrical stimulation at-home by Veterans.

Methods: Sixty Veterans were identified using the Fibromyalgia Symptoms Questionnaire for an electrical stimulation trial during January 1–December 31, 2016 at a Midwestern VA Medical Center. Each patient completed a brief, semi-structured phone interview, which included an inquiry about the benefits of the units on affective symptoms.

Results: Quantitative findings suggest that participants who were given any kind of unit did not have a significant difference in pain level at follow-up. Participants who were given an AID unit reported a significant difference in anxiety symptoms, while those given the M unit reported a significant difference in depressive symptoms at follow-up. Qualitative findings produced three thematic maps: utilization, effectiveness, and satisfaction.

Limitations: This study used a quasi-experimental, one group, pre-/post-test design, and explored the benefits of programming when based on patient self-selection. The instruments used in this study were self-report measures, and some changes may have been the result of outside services and not the treatment delineated in this study. The findings may differ among other Veterans as the current sample had a larger representation of minority groups compared to the typical Veteran profile.

Conclusions: This information is invaluable in helping patients who suffer fibromyalgia symptoms and affective disorders, and for the providers aiding in their treatment.

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DOES COGNITIVE BEHAVIORAL THERAPY INCREASE ACCEPTANCE OF CHRONIC PAIN? A PRACTICE-BASED EVALUATION AMONGST VETERANS

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Purpose: Limited existing literature suggest that ACT and CBT for chronic pain result in comparable improvements in distress and functional impairment, yet it is unclear whether CBT also inadvertently reinforces acceptance-based skills and beliefs. The current study aimed to fill a gap in the literature by evaluating whether group CBT for chronic pain results in clinically meaningful changes in pain-related acceptance in a population of Veterans. The current study also examined the effect of CBT on standardized outcomes (i.e., self-efficacy, health locus of control, quality of life, and illness perception).

Methods: A total of 1204 Veterans with mixed, idiopathic, chronic pain voluntarily participated in a 12-week patient pain education program at a Midwestern VA Medical Center between November 13, 2012 and October 23, 2014. Veterans were then given the opportunity to sign-up for either the ACT and/or CBT groups for chronic pain upon learning about the interventions. A total of 84 (7%) Veterans self-selected to participate in the CBT for pain group intervention. Approximately 60% of the sample ($N = 50$) completed both the pre- and post-intervention assessments, and their responses were included in the current study. The outcome were assessed using the Chronic Pain Acceptance Questionnaire – Revised (CPAQ-R), the Pain Self Efficacy Questionnaire, the Multidimensional Health Locus of Control – Form C, the World Health Organization Quality of Life – BREF, and the Brief Illness Perception Questionnaire. Paired-samples t-tests were conducted to evaluate the effect of the intervention on the outcome variables from baseline to post-treatment.

Results: There was no significant change in pain-related willingness, $t(49) = -1.58$, $p = .120$. There was a significant increase in pain-related self-efficacy, $t(49) = -4.13$, $p < .001$, Cohen's $d = .452$. There was a significant increase in internal locus of control, $t(49) = -3.23$, $p = .002$, Cohen's $d = .366$. There was no significant change in chance locus of control, psychological nor environmental quality of life, and in illness perception.

Conclusions: Results of the present study indicated that group CBT for chronic pain in Veterans increased pain-related acceptance, yet this increase was driven by greater engagement in activities (i.e., participating in everyday activities despite the presence of pain) and not by changes in willingness to experience pain (i.e., decreasing the cognitive fight against pain). These outcomes support the notion that CBT's focus on modifying maladaptive behaviors may inadvertently increase acceptance of chronic pain by reducing behavioral avoidance, which is consistent with the goal of acceptance-focused treatments. Results further indicated that CBT increased both self-efficacy for pain management and internal health locus of control.

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PERCEIVED INJUSTICE MEDIATES THE RELATIONSHIP BETWEEN CHILDHOOD NEGLECT AND CURRENT FUNCTION IN PATIENTS WITH CHRONIC PAIN

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Objective: Cumulative evidence supports the association between perceived childhood neglect and adulthood psychological and physical health, but pathways mediating this association remain largely unknown. The current study examined perceived injustice about chronic pain as a possible mediator, given negative appraisals shaped by childhood maltreatment appear to be generalized to health perception, and perceived injustice about chronic pain has emerged as a salient predictor of pain-related outcomes. Additionally, the Perceived Unfairness Model posits that injustice beliefs as a stressor can lead to negative health consequences over time.

Methods: Patients (n = 742) visiting a tertiary pain clinic completed a survey administered via the Collaborative Health Outcomes Information Registry. Path modeling analyses were used to examine perceived injustice as a mediator of the relationships between childhood neglect and psychological function (depression, anxiety, and anger) and physical function, after controlling for well-known covariates like pain intensity ratings and pain catastrophizing.

Results: Patients endorsing childhood neglect reported higher levels of perceived injustice and worse psychological and physical function. As expected, the effects of childhood neglect on psychological and physical function through perceived injustice were significantly different from zero, suggesting perceived injustice was a significant mediator.

Conclusions: Perceived injustice is a possible cognitive pathway linking perceived childhood neglect to worse psychological and physical function in patients with chronic pain. Therefore, perceived injustice may be a determinant of psychological and physical health and a treatment target for patients suffering from chronic pain and endorsing childhood neglect even after adjusting for pain severity ratings and pain catastrophizing.

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ANXIETY AND DEPRESSION IN MIGRAINE: THE ROLE OF EXPERIENTIAL AVOIDANCE

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Migraine is a chronic and disabling condition, with prevalence rates peaking in young adulthood. Migraine is often comorbid with depression and anxiety, which compound headache disability. Anxiety and depression can trigger headache and lead to avoidance of valued activities and potential headache triggers. Experiential avoidance (EA), or unwillingness to experience adverse personal events (e.g., thoughts, feelings, physical sensations), contributes to psychological distress and further exacerbates headache disability. A growing body of literature suggests that avoidance of headache stimuli, a common component of routine migraine management in clinical settings, may actually increase sensitivity to these stimuli over time. However, relations between EA and common psychiatric comorbidities have not been explored among individuals with migraine. The aim of the present study thus was to explore this relationship while accounting for relevant headache covariates.

2,003 undergraduate students completed measures assessing headache symptoms (SDIH-3), disability (HIT-6), experiential avoidance (AAQ-II), and psychiatric symptoms (DASS-21). Of these, 153 met ICHD-3 classification criteria for migraine and were included in the present study. Hierarchical regressions were used to assess unique relationships between EA and depression and anxiety symptoms among migraineurs while controlling for severity and disability.

Participants' mean age was 19.0 (2.4) years; 87.6% were female. They reported 9.9 headaches per month (5.9) with an average severity rating of 6 out of 10 (1.5). Participants reported a mean disability score of 61 (6.7), indicating severe headache impact. Participants reported moderate levels of depression (M = 9 [9.9]), anxiety (M = 10 [8.7]), and EA (M = 25 [9.3]). In the first hierarchical regression, EA predicted depression symptomatology ($\beta = .52$, $\Delta R^2 = .22$, $p < .001$) above and beyond headache severity and disability. In a second regression, EA also predicted anxiety symptoms ($\beta = .48$, $\Delta R^2 = .19$, $p < .001$) after controlling for headache variables.

The present study found that EA accounts for a substantial amount of unique variance in migraineurs' depression and anxiety, as the observed effects were of medium size even after controlling for headache severity and disability. These findings suggest that increased EA is associated with worsening psychological symptoms among migraineurs. As such, well-established behavioral treatments (e.g., relaxation training, biofeedback, stress management) may incorporate acceptance and flexibility practices to foster improved engagement with intrapersonal and affective experiences that exacerbate head pain. Treatment studies investigating application of these approaches to reduce risk of headache chronification and comorbid depression and anxiety are warranted.

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IMPACT OF OPIOID PRESCRIBING POLICIES ON EARLY HIGH-RISK OPIOID PRESCRIBING PRACTICES FOR INJURED WORKERS IN WASHINGTON STATE

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Objective: High-risk opioid prescribing practices over the past two decades have contributed to a national opioid overdose epidemic. Injured workers, many of whom experience chronic pain, have been exposed to dramatic temporal changes in opioid prescribing practices. Accumulating evidence suggests that even limited opioid use for acute pain could increase long-term opioid use, as well as long-term disability. State-level opioid prescribing policies may promote prevention goals, but it remains unclear which specific policies are most effective. The aim of this study was to assess the associations between implementation of several opioid prescribing policies and changes in early high-risk opioid prescribing practices.

Methods: This study included 676,118 injured workers with Washington State Fund workers' compensation claims for injuries occurring from January 2008 through June 2015. Several Washington State opioid prescribing guidelines and rules, as well as a prescription monitoring program, were implemented during the study timeframe. We used single-group interrupted time series analysis of monthly pharmacy billing data to test associations between policy interventions and reductions in 5 high-risk opioid prescribing measures during the first 3 months after injury: (1) > 7 days supply of opioids, (2) high dose, (3) concurrent opioids and sedatives, (4) chronic opioids, and (5) a composite indicator (presence of any of the 4 specific indicators).

Results: During the first 3 months after injury, 9% of injured workers were exposed to high-risk opioid prescribing practices, 12% to low-risk opioid prescribing, and 79% did not fill any opioid prescription. Among workers prescribed any opioids during those 3 months (N=138,124), 30% had the > 7 days supply indicator, 18% had the high dose indicator, 3% had the concurrent indicator, and 2% had the chronic indicator (not mutually exclusive). Each policy intervention was associated with significant reductions in certain high-risk prescribing indicators. Over the timeframe of this study, there was a general shift toward more infrequent and lower-risk opioid prescribing.

Conclusions: Washington State has been a national leader in transforming workers' compensation-related health care delivery and promoting safer opioid prescribing practices. This study demonstrated that several different opioid prescribing policies were significantly associated with reductions in particular high-risk opioid prescribing practices.

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SYNERGISTIC IMPACT OF PAIN INTERFERENCE AND DEPRESSION ON QUALITY OF LIFE AND FUNCTION OF THE STROKE PATIENTS

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In the United States (U.S.), stroke incidence has decreased from the third to the fifth leading cause of death. Physical pain is a common health condition that occurs after having a stroke. In addition, approximately 30 percent of patients experience depression symptoms post stroke. Both physical pain and depression symptoms impact community integration and quality of life in patients who have had a stroke. Using the baseline data from the VSTOP-EPIC program, this study aims to investigate the interactive effects of pain interference and depression in quality of life and community integration outcome in post-stroke patients. The VSTOP-EPIC program of a 6 session behavioral stroke self-management program that provides an additional 6 sessions that target psychological distress for participants with mild to moderate symptoms of depression and anxiety. At baseline, participants completed validated measures of patient activation, depression, pain severity, and community integration. The main and interactive effects of pain interference and depressive symptoms as predictors of three domains of community integration (home, social, work/activity/productivity), after controlling for relevant covariates (gender, age, stroke severity measured by National Institutes of Health Stroke Scale) were examined. Fifty four participants were included in the logistic regression analyses. In terms of home integration, pain interference and depression accounted for a significant amount of variance ($B = 4.03$, $SE = 1.48$, $p = .007$, and $B = -.044$, $SE = .19$, $p = 0.020$; see Table 2). Regarding social and productive activity integration, pain interference and depression were not significant predictors. However, the interaction terms were significant for both of these dependent variables ($B = -.30$, $SE = .12$, $p = .02$, and $B = -.32$, $SE = .10$, $p = .002$ respectively). Simple slope analyses revealed that pain interference was related to lower levels of productive activity integration among individuals with higher but not lower levels of depression ($B = -2.38$, $SE = 1.10$, $p = .03$, and $B = -3.03$, $SE = .87$, $p = .001$ respectively for slope of the relation between pain and social and productive activity integration respectively). Thus, post-stroke patients with comorbid pain interference and depression showed poorer levels of work and social integration. These data highlight the importance of targeted assessment strategies and interventions that seek to reduce pain and depression among post-stroke patients.

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“THE BALM OF HURT MINDS”: AN EXAMINATION OF THE EFFECT OF SLEEP ON CHRONIC PAIN

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Background: Sleep disturbances and pain are intimately linked – the field has long recognized that disturbed sleep influences pain management and that pain intrudes on sleep cycles. Sleep disturbance and pain are particularly prevalent in Veteran populations and tend to be manifestations of a cyclical pattern of dual interference. However, recent longitudinal studies suggests that sleep impairment uniquely predicts later chronic pain. The goals of the present study were to characterize the relationship between sleep and pain in veterans who participated in Pain Management Clinic treatment and to assess the impact of sleep in predicting later recovery.

Methods: We conducted a secondary analysis of cross-sectional data to establish basic relationships between variables (e.g. sleep and pain at time of evaluation). Veterans presenting for initial chronic pain evaluations completed study questionnaires (i.e. pain catastrophizing, pain intensity). Correlations between key variables were run to examine baseline associations. Veterans who completed a behavioral treatment for chronic pain management (e.g. Living with Chronic Pain) completed these questionnaires following completion of treatment. Subsequently, multiple regression models were used to examine associations between sleep domains and later measures of chronic pain management.

Results: At Time 1, a total of 1885 Veterans completed measures of pain and sleep as part of their initial evaluation. A significant interaction (all p 's < .05) was found for the relationship between sleep and average pain ($r = .159$), pain interference ($r = .360$), pain catastrophizing ($r = .388$), and perceived stress ($r = .399$) at time of intake. At Time 2, 43 Veterans completed measures following discharge from a Pain Management Class. Importantly, sleep at time of intake predicted pain intensity ($\eta_p^2 = .246$) and pain catastrophizing ($\eta_p^2 = .204$) at time of discharge. Ongoing analyses will provide further evaluation into the predictive power of sleep on pain measures at point of discharge.

Conclusions: Pain and sleep disturbances are of the most frequently reported complaints in a medical setting. Impairments in sleep specifically may be associated with deficiencies in multiple domains of pain management, even following successful behavioral treatment. Our results suggest that chronic sleep problems are an important contributor and maintenance factor for pain domains.

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ADHERENCE TO DAILY ASSESSMENT CALLS DURING COGNITIVE BEHAVIORAL THERAPY FOR CHRONIC PAIN

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Cognitive behavioral therapy for chronic pain (CBT-CP) is effective for reducing pain intensity and improving physical activity and quality of life, but barriers such as time commitment and transportation exist. Interactive voice response (IVR) interventions rely on telephone technology to reduce treatment barriers by allowing patients to participate from home. Despite this, concerns about patient willingness to use interventions relying on frequent automated calls have emerged. In the Cooperative Pain Education and Self-management (COPES) study, a non-inferiority trial, Veterans ($n=119$) with chronic back pain were randomized to receive 10 weeks of CBT-CP, delivered either in-person ($n=58$) or via IVR ($n=61$). Veterans in both groups received daily IVR self-monitoring calls to assess their pain, sleep, activity, and pain coping skill practice. Utilizing secondary COPES data, patient engagement defined as number of calls taken was examined on aggregate and as a function of treatment group. Veteran participants were primarily male (72%) and white (80%) with longstanding pain (median: 11 years) of moderate intensity (mean 5.6/10). Participants who remained in the study for a minimum of three weeks (85.7% of the sample) completed an average of 66.1 out of a possible 77 phone calls (85.8%). Participants in the IVR-CBT-CP group (69.2, 89.9%) took more calls on average than those in the in-person CBT-CP group (62.4, 81.0%), $t = 2.74$, $p < 0.01$. Bivariate correlations were run first on aggregate data to determine relationships between IVR engagement and key demographic and baseline clinical indicators; these were then repeated within each group. Number of calls taken was not related to age, sex, employment, education, or to baseline levels of depression, pain catastrophizing, cognitive ability, pain or functional interference for the full sample and for each group (all p values > 0.05). For participants receiving in-person CBT-CP only, higher mood dysregulation was related to better call adherence. The high call adherence rate suggests that participants found the daily IVR monitoring acceptable and the lack of a relationship with demographic variables suggest that this treatment is acceptable to a wide range of patients. Taken together, these findings support the use of daily IVR technology in behavioral interventions for pain without concern for disproportional engagement by specific groups (e.g., women, older people, etc). Further, although patients in the in-person CBT-CP group took fewer calls than those in the IVR-CBT-CP group, their adherence was fairly high, suggesting IVR symptom monitoring may be an acceptable addition to in-person interventions.

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ADVERSE CHILDHOOD EXPERIENCES (ACES) IN FIBROMYALGIA: WHAT IS THE ROLE OF RESILIENCE?

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Introduction: Adverse Childhood Experiences (ACES) generally include child maltreatment (i.e., child abuse and neglect) and household environmental challenges (i.e., witnessing intimate partner violence) that occur during the first 18 years of life. A positive relationship exists between the number of ACES a person experiences and the risk of several health outcomes. Adverse childhood experiences (ACES) have been linked to chronic pain disorders and Fibromyalgia. Previous research has shown an association between ACES and increased pain catastrophizing and depression in Fibromyalgia patients. Further research has found that patients with Fibromyalgia may have poor resilience. We hypothesized that resilience would moderate the relationship between childhood adversity and pain catastrophizing and depression in Fibromyalgia patients.

Method: The present study examined the presence of adverse childhood experiences and depression and pain catastrophizing and resilience in a sample of 163 patients diagnosed with Fibromyalgia who were referred for treatment in a multicomponent treatment program at a large tertiary medical center. Demographic and clinical data were collected at program admission. Patients completed the Adverse Childhood Experiences Questionnaire, the Revised Fibromyalgia Impact Questionnaire (FIQR), the Center for Epidemiologic Studies of Depression Scale (CES-D), the Pain Catastrophizing Scale (PCS), and the Connor-Davidson Resilience Scale.

Results: The average pain catastrophizing score was 25.01 (SD= 13.20). The average CES-D score was 27.35 (SD=13.50). Seventy-two percent of the sample reported at least one ACE with an average of 2.5 ACES (SD= 2.45). The average resilience score was 26.15 (SD= 8.04). Analyses revealed that childhood adversity was significantly related to pain catastrophizing ($p < .01$) and depression ($p < .05$). Resilience was not significantly associated with pain catastrophizing or depression ($p > .05$). There was no significant interaction between resilience and childhood adversity ($p > .05$) on pain catastrophizing or depression.

Conclusions: The current study found that childhood adversity was significantly associated with pain catastrophizing and depression. Psychological resilience has been found to play a role in buffering against depression in adults with a history of ACES. While resilience has demonstrated a moderating effect on childhood adversity in various psychosocial factors, this relationship was not seen in this sample. The Fibromyalgia patients in this sample had an average resilience score (CDSR=26.15) similar to the general population scores (CDSR= 29.0). Further research is needed to illuminate the relationship between childhood adversity and the potential protective impact of resilience in Fibromyalgia.

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AGE-VARYING ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY, DEPRESSION AND ANXIETY AMONG RURAL CANCER SURVIVORS

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Rural cancer survivors report higher psychological distress (e.g. depression, anxiety) than their urban counterparts. Physical activity (PA) can improve psychological outcomes, but if and how this association varies across the lifespan is unknown. We examined the prevalence of depressive symptoms and anxiety by age, and the age-varying associations between PA and depressive symptoms and anxiety among rural cancer survivors. Rural cancer survivors in the Partnering to Prevent and Control Cancer (PPCC) study completed questionnaires assessing sociodemographics, depressive symptoms, anxiety, and PA. Intercept-only time-varying effect models (TVEM) assessed the prevalence of depressive symptoms and anxiety as a function of age, and additional TVEM assessed the age-varying associations of moderate, vigorous, and total PA with depressive symptoms and anxiety. Most participants ($N=219$) were in their mid-60s (M age=64.3±12.5 years, range 18–93), female (59.7%), and overweight (M BMI=29.5±6.8 kg/m²). Intercept-only TVEM revealed that the prevalence of depressive symptoms and anxiety significantly differed by age. Depressive symptoms and anxiety were progressively lower in persons between ages 20 and 40 and were relatively stable in those older than age 40. Models revealed a significant positive association between vigorous PA and depressive symptoms and anxiety in persons aged 20 to 40, such that greater vigorous PA was associated with higher depressive symptoms and anxiety. In those over age 70, there was a significant negative association between vigorous PA and depressive symptoms, such that greater vigorous PA was associated with lower depressive symptoms. Findings suggest that younger rural cancer survivors may be using physical activity as a coping mechanism for depressive symptoms and anxiety, two known adverse effects of cancer treatment. Furthermore, results suggest that physical activity is inversely associated with psychological distress among older cancer survivors. Thus, using strategies to promote physical activity that are targeted toward rural, older cancer survivors may present an opportunity to protect against adverse mental health outcomes and treatment effects in this underserved population.

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EXPLORING AN INTERACTION OF ANTIDEPRESSANTS AND DEPRESSIVE SYMPTOMS ON HEALTH BEHAVIORS IN COLLEGE STUDENTS

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Introduction: Physical activity and healthy eating are important health behaviors however, maintaining these behaviors is challenging in the context of depressive symptoms. Although antidepressants help reduce depressive symptoms, it is unclear how antidepressants interact with depressive symptoms to impact health behaviors, especially among emerging adult college students.

Method: Across 2 academic years, a comprehensive survey of college student health was administered anonymously online to 4286 students in exchange for extra credit in a course. Separate items examined how many hours of moderate and strenuous activity (operationally defined for the participant) a participant had over the past 7 days. History of strenuous activity while in high school, and since starting college were quantified as number of days in a week of at least 20 minutes of activity. Two by two factorial ANOVAs with self-reported antidepressant status (Yes v. No) and presence of clinically significant depressive symptoms (> 9 on PHQ9) were used to determine if the interaction between these two factors influenced selected health behaviors. Quick Food Scan from the Eating at America's Table study was used to assess intake of specific food items (e.g. potatoes, vegetables, fruit, beans).

Results: Valid responses based on embedded validity checks resulted in an analytic sample of 3547. Significant interactions between depressive symptoms and antidepressant status were not found for moderate activity ($p = 0.145$) but were found for strenuous activity $F(1, 3432) = 6.643, p = 0.01$. Among individuals with clinically significant depressive symptoms, those who were taking antidepressants reported more weekly strenuous activity ($p < 0.001$) than those not taking antidepressants. History of activity was examined through two items, one examining strenuous activity since starting college $F(1, 3438) = 8.107, p = 0.004$ and another during high school $F(1, 3440) = 6.585, p = 0.01$. Among individuals with clinically significant depressive symptoms, those who were taking antidepressants, reported more strenuous activity prior to, and since starting, college than those not taking antidepressants (all p 's < 0.001). Dietary consumption items (QFS) found non-significant effects when examined for an interaction with antidepressants and depression status (all p 's > 0.05).

Discussion: These results suggest that antidepressants may also provide a “protective effect” for maintaining healthy exercise habits in young adults who are still experiencing depressive symptoms. Further research is necessary to determine if this is a consistently observable effect, and to understand mechanisms by which antidepressants enable individuals experiencing depressive symptoms to maintain physical activity.

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PARENTAL AND CHILD EXERCISE AVERSION ASSOCIATED WITH CHILD PHYSICAL ACTIVITY

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Background: Parental and child cognitions explain child behaviors. A lot is already known in the context of the associations between these factors and food aversion. Yet, there are no studies testing physical activity aversion. This study investigates associations between physical activity aversions (self-reported child aversion and self-reported parental aversion), and child physical activity. Moderating role of child body mass was tested.

Methods: Prospective study with the 7-8-month follow-up was conducted among 879 parent-child dyads (52.4% girls, aged 5–11 years old, 83.2% mothers). Participants completed self-report measures on their physical activity aversion and physical activity; body weight and height were measured objectively.

Findings: Across children with low and high body mass, there was no direct association between parental physical activity aversion and child physical activity. However, parents with high levels of physical activity aversion (T1) were more likely to perceive their children as having high levels of physical activity aversion (T1). In turn, their children were more likely to report high levels of physical activity aversion (T2), which in turn predicted low physical activity in children (T2). The results were similar across subgroups children with low and high body mass.

Discussion: Parental aversion may constitute the first determinant in the chain of aversion-related cognitions, and thus, it may need to be targeted in programs aiming to change physical activity behaviors in children.

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MIDDLE-AGED ADULTS' EXPECTANCIES PRIOR TO STARTING A COGNITIVE-MOTOR TRAINING AND EXERCISE PROGRAM

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Much interest exists in finding robust interventions for attenuating cognitive aging. In certain circumstances, expected physical and cognitive benefits, as a function of either physical or cognitive exercise, may to some extent, increase one's engagement in such interventions. The extent to which expectancies at the start of a cognitive-motor training program yield any actual benefits is unknown. We hypothesized that baseline expectancies of physical and cognitive enhancement would contribute to greater physical and cognitive effort and subsequent functioning. In this study we conducted correlational and path analyses with data collected from a randomized controlled trial designed to test the efficacy of a cognitive-motor training program (n=68) on subsequent exercise adherence (compared to an attention control video condition; n=65). Cognitive functioning (e.g., Stroop response time, Sternberg memory) and psychosocial assessments (e.g., *Multidimensional Outcome Expectancies for Exercise Scale*, *Exercise Motivation Inventory-2*; *Physical Activity Self-Regulation Questionnaire*, *Multifactorial Memory Questionnaire*) were administered at baseline (M0) and month one (M1) follow-up. Preliminary analyses revealed significant ($p < .05$) positive Pearson r 's between M0 expectancies of physical benefits and relevant physical health-enhancement motives (*positive health and strength*: r 's = .38 and .34, respectively). Similarly, expectancy of cognitive benefit (that exercise will "increase mental alertness") was positively associated with a matching cognitive health-enhancement motive for engaging in exercise (*revitalization*: $r = .34$). Path analyses (*Mplus 8.1*) were then conducted and good model-to-data fit was achieved. Results favored the intervention group and partially supported hypotheses. Specifically, M1 cognitive and behavioral outcomes and exercise motives were regressed on M0 assessments (expectancies, demographics, group). A significant group effect favoring the intervention was found on physical strategy-use at M1 ($\beta = .19$); group's effect on memory strategy-use was in the expected direction ($\beta = .13$). As expected, cognitive performance at M1 favored the intervention (Stroop $\beta = .19$, Sternberg $\beta = .24$) and M0 expectation of increased mental alertness was independently associated with greater M1 memory-strategy use ($\beta = .23$) and faster Sternberg ($\beta = -.29$). Interestingly, higher expectancy of physical benefits was associated with lower memory-strategy use ($\beta = -.20$) and unrelated to physical strategy-use. No effects were found via exercise motives. Altogether, these data suggest that expectancies and training can facilitate greater effort (i.e., physical activity planning, memory-promotion strategies) towards achieving physical and cognitive benefits. In turn, self-directed and supervised engagement may result in greater functioning.

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RELATIONSHIP OF CONSISTENCY IN TIMING OF PHYSICAL ACTIVITY (PA) AND OTHER CUES WITH PA PERFORMANCE IN BARIATRIC SURGERY PATIENTS

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Although bariatric surgery patients, on average, have low physical activity (PA) levels, there is considerable variability in the amounts of PA performed. Understanding factors that underlie this variability can help inform design of PA promotion strategies. There is growing evidence that consistency in temporal PA patterning (e.g., more PA in the morning [AM]) and in other cues (e.g., PA location) underlies PA variability in non-surgical populations. This study is the first to use smartphone-based ecological momentary assessment (EMA) and accelerometry in combination to examine in near real-time whether greater consistency in PA cues (time, type, location) and, specifically, more consistent AM PA, relates to higher PA levels in bariatric surgery patients. Participants (n=76) carried a smartphone synced with an accelerometer via Bluetooth for 10 d preoperatively. When a ≥ 10 -min PA bout was detected via accelerometry, participants were prompted to complete a survey to verify PA (Y/N) and report PA type and location category (e.g., home, work). PA time was automatically recorded and classified as AM (4:00-11:59am), afternoon (12:00-4:59pm), or evening (5:00pm-3:59am). For each participant with >1 verified PA bout, we identified modal type, location, and time of PA; computed % of PA bouts of this type/location/time (to provide indices of cue consistency) and % of AM PA bouts; and classified participants as a consistent AM, afternoon, or evening exerciser ($>50\%$ of bouts in one window) or a temporally inconsistent exerciser ($\leq 50\%$ of bouts in one window). PA outcomes included light (LPA) and moderate-to-vigorous PA (MVPA) min/d. Fifty-five (72%) participants with valid data performed a $M \pm SD$ of 6.8 ± 6.1 PA bouts, 287 ± 75 LPA min/d and 34 ± 23 MVPA min/d. Walking (55%), home (50%) and evening (54%) were the most common PA type, location, and time. Observed high levels of consistency in PA type (81 \pm 19%), location (82 \pm 20%) and time (74 \pm 22%) were unrelated to daily LPA and MVPA (p 's $> .05$). A greater % of AM PA bouts related to greater LPA and MVPA (p 's $< .05$). Consistent AM exercisers also performed more MVPA than evening exercisers ($M \pm SE$: 62 ± 9 vs. 28 ± 4 min/d; $p = .01$). Consistency in AM PA, but not other cues, related to higher PA levels in bariatric patients preoperatively. Future research should identify mechanisms (e.g., habit formation, better time management) underlying the benefits of AM PA and whether targeting increases in AM PA can increase PA in this population.

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RECIPROCAL ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY AND DEPRESSION. LONGITUDINAL RESEARCH IN PATIENT-PARTNER DYADS

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Background: Physical activity (PA) is recommended for boosting mental health and well-being as well as for preventing the development of depression. Although numerous research investigated the associations between moderate-to-vigorous physical activity (MVPA) and depression, the order in which these variables are chained and the dyadic effects remain unclear. Therefore, using a longitudinal dyadic design and cross-lagged analyses, we examined the patterns of associations between MVPA and depression in dyads (patients with a chronic somatic illness and their partners).

Methods: Data were collected twice, with 2-3-month follow-up (Time 2; T2). Participants were 238 dyads of patients with a chronic illness ($M_{age} = 47.03$; 67.2% women) and their partners ($M_{age} = 45.47$; 65.1% women) at Time 1 (T1), whereas at T2 from 176 full patient-partner dyads. Most frequently, patients were diagnosed with cardiovascular diseases (27%) or diabetes (11%). Depression and MVPA scales were filled out by participants at T1 and T2. Path analysis was conducted, accounting for the dyadic interdependence of data, stability of the constructs over time, correlations of all T1 constructs and covariations between all T2 residuals.

Findings: Three dyadic associations were found. More intensive symptoms of depression in patients' (T1) predicted a higher intensity of depression symptoms (T2) among partners and lower levels of partners' MVPA (T2). However more frequent MVPA of patients (T1) explained lower levels of partners' MVPA (T2).

Conclusions: The study provided evidence for the dyadic pattern of associations between depression and MVPA. Accounting for the role of depression may increase the efficiency of MVPA-promoting interventions for patients with chronic diseases and for their partners.

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THE EFFECT OF A SEDENTARY BEHAVIOR INTERVENTION ON PHYSICAL FUNCTION AND QUALITY OF LIFE IN AFRICAN AMERICAN OLDER ADULTS

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Sedentary behavior (SB) increases the risk for declines in health and function in older adults, thus it is important to develop effective interventions to reduce SB. "Stand Up and Move More" (SUMM) is a 4-week SB intervention for older adults based in self-regulation theory. Weekly sessions focus on breaking up prolonged bouts of sitting through group discussion, goal setting, action plans, self-monitoring, and problem solving. The purpose of this pilot study was to examine the efficacy of the SUMM intervention for African American older adults. To do so, participants (age: $M=67\pm9$ yrs) completed the SUMM intervention ($n=15$) or a time and attention matched comparison intervention ($n=11$). Primary outcomes were measured at baseline (wk0) and post-intervention (wk4) and included SB (self-report, accelerometry), physical function (Short Physical Performance Battery), and quality of life (SF-36). Perceptions of the workshop were recorded at wk4. Results from repeated measure ANOVAs indicated no significant changes in accelerometer-derived SB or physical function. There was a significant group effect for self-report SB ($p < 0.05$) such that those in the comparison group reported more SB ($M=612.6\pm153.6$ mins/day) than those in the SUMM group ($M=448.2\pm153.5$ mins/day). In addition, there were significant improvements in quality of life (SF-36 subscales: social functioning and role-physical). Specifically, there was a significant group by time interaction for social functioning ($p < 0.05$). Post-hoc analyses revealed increased social functioning from wk0 ($M=60.3\pm30.6$) to wk4 ($M=78.3\pm19.8$, $p < 0.05$) in the SUMM group and no change in the comparison group ($p > 0.05$). Further, both groups reported higher role-physical scores from wk0 ($M=52.9\pm25.1$) to wk4 ($M=61.8\pm21.3$, $p < 0.05$), indicating fewer problems due to physical health. Pearson correlation analysis revealed a negative correlation between the change in SB and the change in vitality (SF-36 subscale) ($R=-.80$, $p=.003$), indicating those with the largest reduction in SB had the largest increase in vitality. Lastly, participants reported the SUMM workshop was beneficial, encouraging, and made them aware of their sitting time. These results indicate there were quality of life benefits from participating in the SUMM workshop. Future work with larger sample sizes is needed to determine the efficacy of the SUMM intervention for reducing SB and improving physical function for African American older adults. Funding: R21AG054916

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DEEP LEARNING AND GOOGLE STREETVIEW: AUTOMATING MICROSCALE AUDITS OF STREET INTERSECTION FEATURES FOR PHYSICAL ACTIVITY

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Background: Microscale built environment (BE) features correlate with physical activity (PA), even after accounting for macro-scale walkability. In-person audits of microscale features are time-intensive, require extensive training, and are susceptible to auditor fatigue. Virtual audits are valid alternatives to in-person audits and effectively eliminate travel, weather, and safety challenges, yet still rely on the limitations of trained human labor. Artificial intelligence could help scale microscale audits for PA research.

Purpose: Deploy a deep-learning model to detect microscale features in Google Street View (GSV) images at street intersections around participant homes and relate features to adults' PA and self-reported intersection safety features.

Methods: Adults (N=728) in the WalkIT Arizona study reported their walking for transportation and leisure (IPAQ) and the combined presence of walk signals and crosswalks (NEWS) at baseline. GSV images (N=113,872) were obtained in four cardinal directions at intersections within 500m of participant homes. Previously trained and validated (against human raters) region-based convolutional neural network models using Google's TensorFlow detected pedestrian walk signals, crosswalks, and curb cuts in street images. Feature-specific prevalence was estimated by dividing the number of features detected in images by the number of images. Mean prevalence of each feature was calculated by participant buffer. Spearman rho (r_s) tested for correlations between model-detected features, PA, and reported safety features.

Results: Models processed all GSV images in 4.5 hours. Model-estimated prevalence was 0.8% for walk signals, 5% for crosswalks, and 48% for curb cuts. Walk signals correlated positively with crosswalks ($r_s=.72$, $p<.001$) and inversely with curb cuts ($r_s=-.11$, $p=.003$). No association was found between crosswalks and curb cuts. Walking for transportation was associated with walk signals ($r_s=.13$, $p<.001$), crosswalks ($r_s=.13$, $p=.001$), but not with curb cuts. Leisure walking was not related to walk signals or crosswalks but was inversely related to curb cuts ($r_s=-.08$, $p=.04$). Self-reported intersection safety features were related to model-inferred walk signals ($r_s=.20$, $p<.001$) and crosswalks ($r_s=.21$, $p<.001$) in participant neighborhoods.

Conclusion: Results support the predictive validity of deep-learning models and their use for automating microscale audits across thousands of intersections for population surveillance or hypothesis testing of built environments for PA research.

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DOG FACILITATED PHYSICAL ACTIVITY INTERVENTIONS: A SYSTEMATIC REVIEW

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Objective: Regular walking is a critical target of physical activity promotion, and promoting dog walking is a viable physical activity intervention for a large segment of the population. The purpose of this paper was to review intervention approaches to physical activity that have involved canine interactions, and evaluate their effectiveness as well as highlight the populations, settings, designs, and intervention components that have been applied so as to inform future research.

Design: Systematic review.

Data Sources: Literature searches were conducted in May 2019 using five common databases.

Eligibility Criteria: Studies included published papers in peer-reviewed journals and grey literature (theses, dissertations) in the English language that included any physical activity behavior change design (i.e., RCT, quasi experimental) that focused on canine-related intervention. Findings were grouped by population, setting, medium, research design and quality, theory-base, and behavior change techniques applied.

Results: The initial search yielded 22889 publications which was reduced to 13 independent studies of primarily medium quality after screening for eligibility criteria. The approaches to intervene on physical activity were varied and included loaner dogs, new dog owners, and the promotion of walking among established dog owners. Findings were consistent in showing that canine-assisted interventions do increase physical activity. Sub-analyses of intervention effectiveness did not appear to be moderated by population, study quality, dissemination medium, setting or behavior change techniques.

Conclusions: Canine-based physical activity interventions appear effective, but future research should move beyond feasibility and proof of concept studies to increase rigor and quality.

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MEDIATORS OF PHYSICAL ACTIVITY BEHAVIOR CHANGE INTERVENTIONS AMONG ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: An understanding of the determinants of physical activity through mediators of behaviour change is important to evaluate the efficacy of interventions. Prior reviews on this topic have been narrow in focus and used vote counting procedures to analyze the results. The purpose of this review is to update these prior reviews with meta-analysis in order to evaluate the state of our understanding of physical activity interventions that include proposed mediators of behaviour change.

Methods: Literature was identified through searching of five key databases. Studies were eligible if they described a published experimental or quasi-experimental trial in English examining the effect of an intervention on physical activity behaviour and mediators in non-clinical adult populations with the necessary statistical information to be included in the analysis. Zero-inflated correlation coefficients were used as effect size estimates with meta-analytic structural equation modelling to yield the indirect and direct paths within a mediation framework. Overall effects, and results by theory and construct were estimated.

Results: Fifty-one articles which comprised 49 unique samples and 20841 participants of medium and high study quality passed the eligibility criteria. Small overall effects were identified for mediation paths a ($r = .13$), b ($r = .17$), and c ($r = .22$) that showed relatively similar findings by theory and construct. Path c' was statistically significant in almost all models, however, and path AB was not statistically significant using any theory overall. Only regulation behaviors (e.g., plans, self-monitoring) and intentions had statistically significant pathways ($ab = .05$ and $.06$).

Conclusion: The small effect sizes seen in physical activity interventions are not explained by our current theories, mainly because of similarly small A and B pathways. Changes in behavioral regulation constructs and intention have the most evidence as mediators of physical activity intervention. Innovation and increased fidelity of interventions is needed and should be a priority for future research.

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MY PLANS HELP YOU PLAN YOUR PHYSICAL ACTIVITY: ASSOCIATION BETWEEN INDIVIDUAL, DYADIC AND COLLABORATIVE PLANS IN ADULT DYADS

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Background: Existing evidence supports the assumption that action planning is associated with physical activity. However, research focused mostly on forming individual plans and on within-person associations. It is unclear if plans formed by one person may prompt their partner to form plans. The associations between individual, dyadic (i.e., where a target person is setting plans together with a partner on when, where, and how the target person will individually engage in behavior change), and collaborative plans (i.e., where two individuals make plans on when, where, and how to enact a behavior together) are rarely investigated. Therefore, this study tested the associations between three types planning of physical activity (dyadic, collaborative, and individual plans) in sedentary adult-partner dyads.

Methods: Participants were 299 sedentary adult—partner dyads. Sedentary adults were 18–90 years old ($M = 44.43$; $SD = 16.72$), 64.9% were women. Partners were 18–84 years old ($M = 42.87$; $SD = 16.31$), 64.9% were women. Data were collected twice, with one week between Time 1 [T1] and Time 2 [T2] measurements.

Results: Analyses explaining sedentary adult's and partner's planning showed that the frequent use of dyadic and collaborative planning [T1] by the partner was related to more frequent dyadic and collaborative planning [T2] by the sedentary adult. Also more frequent use of collaborative planning [T1] by the sedentary adult was related to more frequent dyadic and collaborative planning [T2] by the partner. Other longitudinal dyadic effects were not significant.

Conclusions: Collaborative planning of one person in the dyad turned out to be significant predictor of planning formed by the other person in a dyad. When developing physical activity promotion interventions researchers and practitioners may consider including collaborative planning training to enhance the probability of dyadic transfer of planning skills.

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THE INFLUENCE OF NEIGHBORHOOD ENVIRONMENT ON PHYSICAL ACTIVITY PATTERNS OF FIRST GENERATION LATINA IMMIGRANTS

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Background: This study explored physical activity (PA) patterns of first generation US Latina immigrants and examined how neighborhood environment factors influence these PA patterns. This research was conducted to inform development of a culturally tailored PA intervention for first generation Latina immigrants.

Methods: Using a cross-sectional study design, 39 first generation Latina immigrants completed the International Physical Activity Questionnaire and the Neighborhood Scales Questionnaire, which assessed 6 perceived neighborhood factors: walking environment, aesthetic quality, safety, violence, social cohesion, and activities with neighbors. Median self-reported MET-minutes/week of PA were used to summarize domain- and intensity-specific PA patterns. Logistic regression examined associations between neighborhood factors and engaging in leisure-time PA (i.e., dichotomous outcome of some vs. no leisure-time PA) and meeting national PA guidelines (i.e., dichotomous outcome of meeting vs. not meeting guidelines).

Results: Participants (age = 40.5 ± 4.3 years; length of US residency = 4.6 ± 1.0 years) reported engaging in a median of 4512 MET-minutes/week of total PA. The majority of their PA was acquired through domestic activities (2160 MET-minutes/week), followed by leisure-time (396 MET-minutes/week), transportation (198 MET-minutes/week), and work PA (0 MET-minutes/week). Intensity-specific PA patterns showed that participants engaged in a median of 594 MET-minutes/week of walking activity and 3500 MET-minutes/week of moderate-to-vigorous PA. Logistic regression models showed that neighborhood factors of walking environment, aesthetic quality, and safety were significantly associated with engaging in leisure-time PA (odds ratios of 5.95 [95% CI:1.49; 23.74], 2.45 [95% CI:1.01; 5.93] and 3.30 [95% CI:1.26; 8.67], respectively) and meeting national PA guidelines (odds ratios of 8.44 [95% CI: 1.63; 43.69] 11.99 [95% CI: 1.79; 80.29], and 3.54 [95% CI:1.21; 10.29], respectively). Neighborhood factors of violence, social cohesion, and activities with neighbors were not significantly associated with PA outcomes.

Discussion: Although most participants engaged in PA at levels that met national guidelines, the majority of their PA was achieved through domestic activity, with limited leisure-time, transportation, and work PA. Given leisure-time PA, in particular, plays a significant role in improving health outcomes, findings suggest that many Latina immigrants could benefit from a leisure-time PA intervention. Such interventions should consider neighborhood environmental influences, as our data suggest these factors can serve as determinants to PA.

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“I NOW FEEL THE NEED TO EXERCISE”: A QUALITATIVE STUDY OF PHYSICAL ACTIVITY MAINTENANCE AMONG LATINAS

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Background: The impact of physical activity (PA) interventions can be enhanced by identifying and implementing effective strategies to help Latina women begin exercising and achieve long-term maintenance. Because most PA promotion research has focused on helping individuals initiate PA, little is known on individual, interpersonal, or environmental factors that influence PA maintenance.

Purpose: This qualitative study aimed to explore factors associated with maintenance and non-maintenance of PA among Latinas.

Methods: Semi-structured individual interviews were conducted with 21 Latina women who increased their PA as a result of an intervention, and who completed a subsequent 3-month maintenance period without any contact from research staff. Data were analyzed using structural coding procedures under a thematic analysis framework.

Results: Among the most important facilitators of PA maintenance identified by participants were: having made PA a habit or part of their lifestyle; the ability to proactively overcome obstacles to engaging in PA; having specific sources of motivation such as satisfaction with outcomes obtained; having the knowledge and skills to maintain PA; and having a supportive social and built environment. Alternatively, non-maintainers reported obstacles including self imposed barriers (e.g. being embarrassed to exercise in public), an environment that was not conducive to exercise, and lack of social support or accountability. Moreover, non-maintainers seemed dissatisfied with their weight loss outcomes.

Conclusions: Teaching intervention participants skills to proactively overcome obstacles, and guiding them to form habits and set realistic expectations, could help participants to independently continue engaging in PA upon completion of PA interventions.

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ASSOCIATION BETWEEN THE BUILT ENVIRONMENT AND ACTIVE TRANSPORTATION AMONG U.S. ADOLESCENTS

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Because low physical activity (PA) is a major determinant of obesity and cardiovascular disease in the U.S., interest is increasing in factors influencing PA. One opportunity for increasing daily PA is using it as transportation to and from school and/or work. We examined associations between characteristics of the built environment of home neighborhoods and transportation-related PA to and from school and/or work among youth and emerging adults. The data were drawn from Waves 1 (high school) and 4 (post high school) of the NEXT Generation Health Study (n = 2780), which enrolled a nationally representative, longitudinal cohort of U.S. students starting in 10th grade (Wave 1) in the 2009–10 school year. Participants' modes of travel were categorized into three groups: active (walking/cycling, AT), public (PubT), and passive transportation (being driven or chauffeured/driving, PT). Neighborhood characteristics included land use mix, street connectivity, residence density, park density, recreational density, and walkability. Multinomial logistic regressions were used to examine adjusted associations between modes of travel to and from school and/or work and neighborhood characteristics for Waves 1 and 4 separately. Analyses accounted for complex survey features including stratification, clustering and sampling weights and covariates (ethnicity, sex, education, and socioeconomic status). The weighted percentages of AT, PubT, and PT were 22%, 29%, and 49% in Wave 1 and 35%, 11%, 54% in Wave 4, respectively. The multivariable multinomial logistic models show that compared to PT group, residence density (standardized adjusted odds ratios [sAORs]: 3.01 in Wave 1 and 11.46 in Wave 4) and walkability (sAORs: 2.86 in Wave 1 and 2.75 in Wave 4) show the strongest associations with transportation-related PA in AT group in both Wave 1 and Wave 4. Similarly, residence density (sAOR = 16.91) and walkability (sAOR = 4.72) show the strongest association with transportation-related PA in PubT compared to PT in Wave 4, whereas residence density (sAOR = 4.72) is the only built-environmental characteristic that is significantly associated with PubT in Wave 1. More mixed land use, greater street connectivity, and higher walkability and density of residence, parks and recreational facilities were associated with AT, suggesting that city planners may need to consider creating more walkable communities with mixed land use to promote daily transportation-related PA.

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ADDING AUTOMATED AND HUMAN COACHING TO AN M-HEALTH PHYSICAL ACTIVITY APP FOR US VETERANS: RESULTS OF THE STAY STRONG TRIAL

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Many military servicemembers rapidly decrease physical activity (PA) levels as they enter civilian life. Mobile health (mHealth) devices with personalized health coaching may help veterans sustain PA levels and increase effectiveness of mHealth interventions. Stay Strong (SS), a mobile app tailored for veterans of recent wars, was developed to augment PA monitoring device outputs by providing individualized health coaching, tailored automated messaging, and personalized goal-setting. The objective of this study was to determine whether a mobile PA sensor combined with health coaching would improve PA levels as measured by *active minutes* recorded by Fitbit Charge 2, at 12 months versus a mobile PA sensor alone among Afghanistan/Iraq Veterans.

Invitation letters were sent to a random sample of 2286 US Afghanistan and Iraq War Veterans; 357 completed online enrollment process and were randomized to either SS with health coaching (SS+Coaching; n = 178) or SS-alone (SS-Alone; n = 179). SS-Alone provided app-based dashboard showing PA levels and weight from a Bluetooth scale. SS+Coaching added up to 3 coaching calls, standard and tailored messaging and weekly personalized PA-based goals. Primary outcome was change in PA level (assessed via Fitbit "active minutes") from baseline to 12-months. Primary analytic cohort was an intent-to-treat, with outcomes compared using 6- and 12-months measures and longitudinal data mixed-effects models.

Active minutes at baseline averaged 247.9, with no difference between groups (p = 0.90). Compared to baseline, both groups exhibited declines in PA at 12 months (65.78 vs. 41.01). Participation in SS-Alone versus SS+Coaching resulted in no significant differences in active minutes at 12 months (p = 0.92 for ANCOVA; p = 0.84 for mixed-effects model). Engagement in both programs declined after 6 months (57% of SS-alone vs 70% of SS+Coaching synced valid active minutes at 12-months), though SS-Alone experienced a steeper decline (OR = 0.98 (95% CI: 0.94, 1.02)). In both groups, 12-month follow-up participation exhibited declines, with 33% of SS-Alone and 38% of SS+Coaching participants remaining in the study.

Compared to SS-Alone, adding low-intensity health coaching in the first 12 weeks of a PA mHealth program, to tailored and standard motivational messages and personalized goals, was not enough to prevent PA decline. High response to "cold" invitation letters indicated high enthusiasm for study though the attraction of free equipment (e.g., Fitbit) may have contributed to both high initial excitement and increased baseline PA. Longer, more intense coaching may be needed to sustain engagement and increase PA.

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PHYSICAL ACTIVITY IMPROVEMENTS AMONG PEER MENTORS ENGAGED IN A BEHAVIORAL INTERVENTION TRIAL OF LATINO ADULTS.

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Studies have shown that regular physical activity (PA) improves overall health and wellbeing. However, maintaining nationally recommended levels of PA becomes challenging with increasing age. PA support from trained peer mentors has been shown to increase moderate to vigorous physical activity (MVPA) among aging populations, yet little is known about the effects of such support on mentors' own PA. The purpose of this secondary analysis of a successful trial using physically active peer mentors was to determine if the mentors maintained or increased their own MVPA and motivation to be active. As part of the COMPASS2 trial, physically active mid-life and older adults were recruited to serve as PA mentors to sedentary Latino adults living in their community. After a systematic screening process, eligible peer mentors were consented and trained in intervention delivery, which was based on Social Cognitive Theory and the Transtheoretical Model. Each mentor was assigned at least one mentee (mean number of mentees/mentor=4), and met in-person with each mentee for ~20 minutes/session during a one-year period (session schedule=weekly for 8 weeks; bimonthly afterwards). Peer mentors were required to attend monthly 2-hour group meetings with research staff and other mentors to receive additional training and share and learn from one another. The validated CHAMPS PA survey was orally administered at baseline and at the end of mentors' study participation along with a qualitative exit interview. Quantitative survey results indicated that peer mentors ($N=25$; mean age= 61 ± 13.8 years; 80% Latino ethnicity; 80% women) were able to a) maintain >250 average weekly minutes of MVPA; b) increase average weekly minutes of moderate-intensity walking (e.g., brisk walking, uphill walking) by 40%; and c) increase mean minutes of aerobic machine use by two-fold (i.e., from 55 mins to 120 mins, on average). Peer mentors also reported that their study participation motivated them to be more physically active, become more conscious of their PA levels, and better understand the connection between PA and their overall health. This study represents a potential "stealth" intervention model for promoting PA maintenance among already active aging adults. The findings suggest that peer mentors may improve their own motivation for PA and PA behaviors, providing a "dual" benefit from such interventions beyond participant successes in improving their PA.

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PHYSICAL ACTIVITY CO-PARTICIPATION AMONG PARENT-PRESCHOOL CHILD DYADS

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Purpose: Family-based physical activity interventions are recommended by the Community Preventive Services Task Force to achieve small, statistically significant increases in child physical activity. These interventions often encourage families to engage in physical activity together, yet little is known about parent-child physical activity co-participation. The specific goals of this study were to: compare patterns of physical activity co-participation for parent and 2–5 year old child dyads by parent sex, examine relationships between parent-child physical activity co-participation and child physical activity (total and moderate-to-vigorous; MVPA), and examine the relationship between self-reported and objective measures of physical activity co-participation.

Method: Parent-child dyads ($N = 45$; 49% mother-child) wore Bluetooth-enabled accelerometers for 8 days to measure individual physical activity and physical activity co-participation. Parents completed demographic and self-reported family physical activity questionnaires.

Results: Parent-child dyads spent 136 ± 68 minutes per day in-proximity according to the Bluetooth-enabled accelerometers. The majority (90%) of parent-child in-proximity time was spent in sedentary and/or light activities. Child total physical activity (light and MVPA) was not associated with parent light activity ($r = .23, p=.12$) or MVPA ($r = -.07, p = .64$). Partial correlations, controlling for daily in-proximity time, showed a positive, statistically significant relationship between child total physical activity and parent-child in-proximity active minutes ($r = .48, p=.001$). A one-way ANOVA was used to compare individual child physical activity by parent-child physical activity co-participation tertiles. Children in the highest tertile of parent-child co-activity participated in significantly more MVPA per day (75.5 minutes) compared to children in the lowest tertile (50.3 minutes) ($p = .03$). There was no association between self-reported and objective measures of physical activity co-participation.

Conclusion: Parents and their young children spent most of their time together engaged in sedentary and light activities. Children who engaged in the most physical activity with their parent had the highest levels of individual MVPA. Future studies are needed to assess the validity and reliability of self-reported physical activity co-participation measures and to provide contextual information about how parents and children spend their time together to enhance family-based physical activity interventions.

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A QUALITATIVE EVALUATION OF A PILOT BEHAVIORAL INTERVENTION TECHNOLOGY PROGRAM TO PROMOTE WALKING AMONG UNDERSERVED PATIENTS

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Introduction: Sedentary lifestyles are prevalent among patients from ethnic minorities and a lower socioeconomic status. Behavioral intervention technologies (BITs) using smartphones and wearable devices may provide these vulnerable populations access to health technologies that encourage walking and promote increase in physical activity. However, these populations are often under-represented in BIT research.

Objective: To identify major themes from patient reported experiences with the pilot program set in an ambulatory care setting that emerged during the study exit-interviews.

Methods: Thirty sedentary, overweight (BMI >25 kg/m²) patients recruited from an inner-city academic medical center participated in an 8-week pilot BIT program. A health coach (HC) encouraged walking and helped patients establish step goals each week. Patients wore Fitbit devices and received text messages from the HC. Step goals were SMART: Specific, Measurable, Achievable, Relevant, and Time-bound. Texting and Fitbit activities were managed with mytapp, a secure, low-cost, custom app. After 8 weeks, audio-recorded interviews were conducted to assess patients' experiences. Using thematic analysis, two independent reviews analyzed the responses to identify relevant themes. QDA Miner Lite (version 5) was used to manage data and coding.

Results: Of the 30 who enrolled, 23 (79%) were female and were on average 47 (SD = 9.5) years old. The majority were African American (80%), followed by Hispanic/Latino (17%), with 6 (20%) who reported a yearly household income < \$20,000, and 11 (37%) reported high school as their highest level of education. At baseline, the BMI was on average 39.6 kg/m² (SD = 9.2 kg/m²), and 9 (30%) of the participants self-rated their health as either "fair" or "poor." The following eight themes emerged through a BIT framework: (1) Texting convenience, (2) Personal HC, (3) Goal Setting, (4) Fitbit feedback, (5) Patient self-motivation, (6) Challenges, (7) Habit formation, and (8) Other changes.

Conclusion: Patients' feedback provided rich data for future iterative program development. Findings showed that the pilot program was well accepted among participants. Preliminary results of a BIT walking program integrated into primary care supported further development and testing for a highly vulnerable group.

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ACUTE PSYCHOLOGICAL EFFECTS OF RESISTANCE EXERCISE IN MEN WITH SYMPTOMS OF MUSCLE DYSMORPHIA: A PILOT STUDY

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Background: Muscle dysmorphia (MD) reflects a pathological preoccupation with increasing muscle size and it disproportionately affects men. Men with MD have poor mental health and engage in risky behaviors to increase muscle size, including excessive resistance exercise (RE) despite the risk of injury. Research has identified various psychological and behavioral correlates of MD, but few studies have examined factors that may reinforce RE behavior.

Method: Using a within-subjects design, 21 men aged 18–35 years with MD symptoms completed several MD assessments and both an acute bout of moderate (70% of 10-repetition maximum; 10-RM) and high (100% of 10-RM) intensity RE in a counter-balanced manner separated by at least 48-hours. State body image, perceived muscle size, exercise enjoyment, and ratings of perceived exertion (RPE) were assessed before (PRE), during (MID), immediately after (POST), and 15 and 30 minutes after (DELAY 15 and 30, respectively) RE.

Results: 95.2% of the sample reported being stressed about their body size in social, occupational, or other situations, and 90.5% indicated that they exercise when they are sick or injured, despite any risk of injury. The majority also perceived their current muscle size to be significantly less muscular than what they would ideally want to look like; what other people would choose as ideal; and what their current or future romantic partner would find most attractive ($p < .001$). Other results showed that body image improved from PRE to POST during both conditions ($F = 6.54, p < .01$), with greater effect sizes for high ($d = 0.57$; 95% CI -6.82, -1.46) compared to moderate ($d = 0.39$; 95% CI -4.12, -0.18) intensity. Perceived muscle size improved from PRE to POST during the high intensity condition only ($F = 5.98, p < .01, d = 0.66$, 95% CI -0.76, -0.29). Participants also enjoyed the high intensity condition more than the moderate intensity ($t = 3.21, p < .01, d = 0.35$, 95% CI -0.77, -0.17), despite higher perceived exertion at each timepoint ($p < .01$). None of the changes were sustained during the DELAY period.

Conclusion: This pilot study suggests that high intensity RE can enhance body image and perceived muscle size more than moderate intensity RE. These effects are acute and attenuate within a short period of time. Future studies that test different RE variables, such as session duration and weekly session frequency, are needed to further examine factors that reinforce RE behavior.

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A COMPARISON OF TOTAL AND DOMAIN-SPECIFIC SEDENTARY TIME IN BREAST CANCER SURVIVORS AND HEALTHY CONTROLS

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Background: Sedentary behavior is associated with many negative health outcomes for breast cancer survivors (BCS) including mortality risk and poorer quality of life. Cancer survivors engage in more sedentary behavior than those with no history of cancer, with 66% of their day spent sedentary. However, little is known regarding the context in which sedentary behaviors are performed, which is imperative for successful behavior change.

Purpose: To examine differences in total and domain-specific sedentary time of BCS and healthy, age-matched controls.

Methods: 20 BCS and 20 age-matched, healthy controls wore ActiGraph GT3X+ accelerometers to measure time spent physically active and sedentary. Participants also completed surveys assessing demographic, medical and behavioral factors (i.e., smoking, drinking). Self-reported sedentary behavior performed across numerous domains (i.e., transport, work, screen time and leisure) on work and non-workdays was measured using the Domain-Specific Sitting Time Questionnaire. Analysis of covariance (ANCOVA) was conducted to explore between-group differences in sedentary behavior adjusting for significant between-group differences in demographic, medical or behavioral factors.

Results: BCS were 55.3±9.8 years old, had a BMI of 28.8±5.6 kg/m², and were 77.9±42.7 months since diagnosis. Healthy controls were 53.8±9.6 years old and had a BMI of 26.2±7.3. BCS and healthy controls spent a total of 661.8±88.4 and 727.6±135.5 minutes/day sedentary, respectively. BCS reported significantly more time spent watching TV (152.4 vs. 60.3 minutes/day; $F(1, 36)=7.60$; $p=.009$) and significantly less sedentary time in leisure activities (57.6 vs. 106.9 minutes/day; $F(1,36)=8.19$; $p=.007$) than their healthy counterparts. No significant differences were found for total volume of sedentary time between the groups.

Conclusion: BCS spend the majority of their waking hours sedentary. Despite no differences in total volume of sedentary time, domain-specific sedentary time varied between BCS and controls. BCS engaged in more TV watching and less sedentary time in other leisure activities (e.g., socializing) than controls, thus interventionists should focus on reducing or breaking up time spent watching TV in BCS. Further investigation into the factors contributing to TV viewing is warranted to determine specific intervention targets.

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WHEN OUTCOMES MATTER: A TEMPORAL ANALYSIS OF BELIEFS IN THE EXERCISE DOMAIN

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Presently there is insufficient evidence to support the complex capabilities of interventions that employ mHealth technology and can reach a person at any time. An understanding of what beliefs predict behavior from day to day and how temporal context influences these associations will inform interventionists about the types of beliefs to target and when. The present research defines and examines two distinct measurement issues regarding temporal context related to attitudes and outcome expectancies for exercise behavior. An ecological momentary assessment (EMA) study was conducted among 50 previously inactive adults participating in an exercise study who reported their beliefs and behavior over 12 weeks. Attitudes are likely to be sensitive to the timing of their assessment given that attitudes are conceptualized to integrate outcome expectancy with subjective value; as the value of an outcome changes, attitudes may also change. Using EMA to examine daily processes addresses previously unanswered questions about whether prior evidence supporting long-term (over weeks or months) between-subject associations hold for day to day within-subject processes. A more positive affective attitude was associated with a 22% greater chance of exercise later that same day ($OR = 1.22$, $p = .002$). Outcome expectancies are beliefs about specific consequences of behavior that can occur immediately or in the long-term. Given that people differ in how much they discount future rewards, perceptions about outcome timing may influence the predictive strength of the belief on behavior. In prior work examining affective versus instrumental beliefs, outcome type may be confounded with temporal proximity given that affect-related outcomes tend to be more immediate consequences than instrumental outcomes. To our knowledge no validated assessments for outcome timing existed prior to this study, thus we piloted a questionnaire for this purpose. Affective outcome expectancies predicted more min/week of exercise ($b = 38.61$, $p = .045$) and participants believed affective outcomes would occur 48.6 days sooner ($p < .001$) than instrumental outcomes. Temporal differences in outcome timing may underlie stronger associations commonly found between affective outcome expectancies and exercise. Taken together, this research highlights the importance of temporal context when targeting these social cognitive beliefs.

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A302

6:15 PM-7:30 PM

MEANING IN LIFE: A BUFFER AGAINST THE EFFECTS OF ANXIETY ON SUBJECTIVE PHYSICAL HEALTH

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Presence of meaning in life (PM) is a core component of well-being that aids people in coping with anxiety and the everyday life stressors that provoke worry, uncertainty, and distress (e.g., Hill et al., 2018). Research suggests that people who report their lives as highly meaningful tend to experience better mental and physical health than those who experience their lives as low in meaning or purpose (e.g., Roepke, Jayawickreme, & Riffle, 2014). People who experience a strong sense of purpose have lower levels of inflammation, report better physical health, and live longer than those with low levels of PM (e.g., Hooker, Masters, & Park, 2018). Unlike meaning in life, high levels of anxiety tend to detract from people's physical health (e.g. Charles & Almeida, 2006). Empirical research indicates that highly anxious people tend to experience increased risk for myriad diseases (e.g., Roest, Martens, de Jonge, & Denollet, 2010) and report worse overall physical health (e.g. Watson, 1988).

In this study, we sought to explore mechanisms by which meaning might influence the effects of anxiety on physical health perceptions day-to-day. We hypothesized that participants with high PM would report less anxiety and better physical health at the trait level than those low in PM. We also expected that anxiety would not have as detrimental of an effect on people's perceptions of their physical health if they experienced high levels of meaning in life. In other words, on days when people experience anxiety, they will likely report lower subjective physical health; however, participants with low PM will report significantly worse health when anxious than those with high PM.

We conducted a three-week daily diary study with an undergraduate student sample (n=66; 76% women, 76% Caucasian). Participants completed a baseline measure of PM and a set of daily measures, including anxiety and physical health. Data were analyzed in MPlus using MSEM with PM as a trait-level moderator of the daily anxiety-health relationship.

Results aligned with our hypotheses. First, we found that participants high in PM (1 SD above the mean) reported significantly less anxiety and better overall health than those low in PM (1 SD below the mean). Second, we found that PM significantly moderated the effects of anxiety on health such that people who were low in PM experienced a greater decline in physical health on days when they reported more anxiety than participants high in PM (Slope = .36 (SD = .19), $p = .020$, Bootstrapped CI [.007, .72]. On days when participants reported minimal anxiety, they reported similar physical health. Thus, PM seems to serve as a buffer when people experience high levels of anxiety on a day, such that those high in PM do not seem to experience a perceived worsening of their physical health as do people low in PM. Results support the important role of PM in protecting against physical and psychological distress.

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A303

6:15 PM-7:30 PM

HEALTH BEHAVIOR PROFILES AND QUALITY OF LIFE AMONG ALASKA NATIVE MEN AND WOMEN

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Introduction: Indigenous populations, including Alaska Native men and women, have long experienced substantial health inequity and have a lower life expectancy relative to other US racial/ethnic groups. While the contributing factors are multiple and complex, the health behaviors in which people engage, such as smoking and exercise, relate to both quantity and quality of life. In this study we examined various health behaviors and their relation to health-related quality of life (HRQoL) and depressive symptoms among Alaska Native men and women in the Norton Sound Region.

Methods: The Centers for Disease Control and Prevention's "Healthy Days Measure" assessed HRQoL in the past 30 days. Used with diverse populations, the measure yields the number of days when a person was physically and mentally unhealthy (categorized as none, infrequent [1–13 days], and frequent [14+ days]) and provides a subjective overall health rating. The 10-item CESD assessed depressive symptoms. Health behaviors examined were physical activity, dietary habits, past month use of cannabis, heavy episodic use of alcohol (4+ drinks for women, 5+ drinks for men), and cigarette dependence based on time to first cigarette upon waking and cigarettes per day. Univariate regressions tested the association of each behavioral risk factor with the HRQoL subscales and CESD. Analyses were adjusted for age, sex, and community connectedness, as a socioeconomic indicator.

Results: The sample (N=299, 49% female, age M=46, SD=14) were current smokers who averaged 12 cigarettes per day (SD=10) for M=30 years (SD=14), and 65% smoked within 30 minutes of waking. Adjusting for covariates, frequent unhealthy days was associated with cannabis use (OR=2.95, $p=.001$) and smoking cigarettes sooner upon waking (OR=2.10, $p=.02$). Overall subjective good health was associated with being physically active (OR=1.82, $p=.02$) and not engaging in heavy episodic alcohol use (OR=0.54, $p=.02$). Depressive symptoms were associated with heavy episodic alcohol use (B=0.19, $p=.001$) and cannabis use (B=0.16, $p=.008$). Diet was unrelated to the HRQoL subscales and CESD.

Conclusions: Use of substances (alcohol, tobacco, cannabis) and engagement in physical activity are related to health-related quality of life and depressive symptoms in a sample of Alaska Native people of the Norton Sound Region. Study of lifestyle interventions to optimize quality of life and reduce depressive symptoms in Alaska Native populations is encouraged.

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A304

6:15 PM-7:30 PM

A PILOT STUDY TO EXAMINE NURSES' PERCEPTIONS OF SEXUALLY TRANSMITTED DISEASE (STD) EDUCATION IN LONG-TERM CARE FACILITIES

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Background: Many older adults (40%) in the US aged 65–80 are sexually active (American Association of Retired People [AARP], 2018) yet report less condom use, fewer STD screenings, and lower risk perceptions of STDs than their younger counterparts (Syme, Cohn, & Barnack-Tavalaris, 2017). Since more than 1.5 million nurse employees work in LTCFs in the US (CDC, 2013), examining perceptions of STD education from the nurses' perspective allows for insight into why STD education in long-term care facilities (LTCFs) remains rare among this vulnerable population.

Methods: As a pilot study to examine both current STD education practices and perceptions of STD education, a four-page mailed survey was sent to all LTCF Directors of Nursing (DONs) in Northwest Ohio (n=99) with a response rate of 29% (n=29). DONs were the target population as they are the most likely employee to hold Registered Nurse licensure. The Health Belief Model formed the basis for the 21-item survey.

Results: Respondents were predominately female (97%), Caucasian/White (83%), over 40 years of age (76%), with an Associate degree as their highest level of education (52%). Only 2 nurses stated their LTCF provides STD education to their residents while 4 nurses stated their LTCF provides condoms. Almost all nurses were supportive of STD education at their facility (97%) but previous education on how to address STDs among residents was rare, with 86% of nurses having had no formal training. Overwhelmingly, nurses did not see STDs or human immunodeficiency virus (HIV) as problems among their residents (100% and 96%, respectively) yet support for sex in LTCFs was high. All (100%) agreed sex among married residents should be supported while 75% agreed sex among non-married residents should be supported. Furthermore, 89% believed LTCFs should provide private spaces for intimate partner visits. Most nurses stated they were comfortable discussing HIV risk (86%), STD risk (86%), erectile dysfunction (76%), sexual desire and intimacy (68%), and correct condom use (66%). The most commonly perceived barriers to providing STD education were family opposition (62%), resident embarrassment (52%), limited time (48%), and lack of education on STD prevalence among older adults (48%). The most commonly perceived benefits were being seen as a leading LTCF within the community (66%), promotion of healthy sexual relationships (55%), improved health of residents (45%), and improved knowledge of STDs among residents (45%).

Conclusions: There is a clear disconnect between what the evidence says in terms of STD risk among older adults and what nurses are perceiving as problems among their residents. There was strong support for STD education among nurses in our study though implementation remains rare. Addressing the most commonly perceived barriers and benefits may prove beneficial in increasing the number of LTCFs that provide STD education to residents.

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A305

6:15 PM-7:30 PM

PILOTING AN EXPRESSIVE WRITING INTERVENTION TO ADDRESS SEXUAL HEALTH AND SUBSTANCE USE IN EMERGING ADULT GAY AND BISEXUAL MEN

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Background: Emerging adult (EA) gay and bisexual men (GBM) are consistently among those facing the highest HIV prevalence. Expressive Writing (EW) interventions have demonstrated efficacy to reduce drinking and improve psychosocial functioning. The hypothesized mechanism of EW is exposure. Writing provides an opportunity to experience emotions that might otherwise be avoided, allowing one to re-organize these experiences more adaptively. The learning objectives of this study were (a) to evaluate the feasibility and effectiveness of Express Yourself (EY): an EW intervention addressing condomless anal sex (CAS) and substance use (SU) related problems in EA GBM; and (b) to examine linguistic mechanisms by which EW may exert effects of CAS and SU among EA GBM.

Methods: EA GBM (n=78) from New York City were enrolled into a pilot randomized controlled trial. Eligible participants age 18–29 had at least one incident of SU (e.g. cocaine, crack, ecstasy, methamphetamine, heroin) in the past 60 days; and at least one incident of CAS with a casual male partner in the past 60 days.

Participants completed a baseline survey and interview before random assignment to one of two conditions. Both conditions involved three 15-minute writing sessions with breaks between each session. Those in EY (n=39) were instructed to write about their deepest emotions and thoughts about sexuality and sex life. Control participants (n=39) wrote about their day. Using Linguistic Inquiry and Word Count (LIWC) software, writing content was analyzed to calculate degree to which various categories of words were used. Outcome variables were assessed using a count outcome of CAS and the Comprehensive International Diagnostic Instrument – Substance Abuse Module (CIDI-SAM).

Results: The direct effect of condition on CIDI scores and CAS was non-significant for both outcomes. Significant indirect effects through the linguistic content of writing samples were detected. PATH models indicated the participants in the EY condition used significantly more positive and negative emotion words. Indirect effect tests indicated Treatment condition accounted for significant reductions in CIDI scores through increases in positive emotion words. Similarly, results of indirect effects testing indicated treatment accounted for significant decreases in CAS through its association with positive emotion words and significant increases in CAS through its association with negative emotion words.

Conclusions: These findings reinforce the premise that EW operates, in part, through mechanisms related to emotional exposure. They further suggest that EW may constitute a low-cost and scalable intervention to reduce SU and CAS among EA GBM. Benefits appear to be associated with the presence of positive emotion words. Future studies might benefit from the experimental manipulation of writing prompts to maximize writing content for therapeutic benefits.

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A306

6:15 PM-7:30 PM

ACCELERATING EHEALTH BEHAVIORAL INTERVENTIONS INTO PRACTICE: THE KEEP IT UP! HYBRID EFFECTIVENESS-IMPLEMENTATION TRIAL

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Background: Despite substantial NIH investment in developing eHealth HIV interventions, little implementation research has examined strategies to effectively scale up these programs. To advance eHealth intervention implementation, we are conducting a county-randomized comparative implementation trial of two delivery approaches for Keep It Up! (KIU!), an online, CDC-best-evidence HIV prevention program for young men who have sex with men (YMSM) that just tested HIV negative. Strategy 1 is a traditional approach of community-based organizations (CBOs) integrating the program into their ongoing HIV testing operations. Strategy 2 is direct-to-consumer (DTC) strategy with home-based HIV/STI testing. This presentation describes the protocol for target county selection and outcome measures in the trial as an illustration of implementation research for behavioral interventions.

Methods: We reviewed geographic clustering of counties with 1,500+ YMSM. Standalone counties were automatically selected for inclusion. Among clustered counties, we selected the one with the most Black and Latino 18–29-year-olds and removed those directly adjacent, repeating this procedure until 64 counties were selected. Two adjacent counties were added based on topography.

Selected counties were stratified and randomized 2:1 to receive KIU! via the CBO or DTC strategy. Funding proposals were solicited from CBOs in the 44 CBO-strategy counties. Counties with successful CBO applicants were checked against the DTC counties to ensure balance. Outcomes for this type III hybrid trial follow RE-AIM, with the primary outcomes being impact (reach x effectiveness) and cost per infection averted. We also capture various metrics of adoption and implementation from YMSM self-report, KIU! meta-data, and CBO and DTC staff reports and interviews.

Findings: The CBO-strategy arm selected 14 CBOs for funding in the first round. A second funding announcement was released Fall 2019, with the goal of selecting another 8 CBOs, resulting in 22 counties per arm. The subsequent panel presentations will discuss the pragmatic design of each arm as well as the refreshing of the intervention technology to meet the demands of scalability.

Implications for Behavioral Interventions: Given the national urgency to end the HIV epidemic, understanding the best strategies to implement eHealth HIV interventions to reach the most people is critical to realizing the cost-effective scalability promised by such interventions. Careful selection of research targets and unobtrusive measures is critical to maintaining scientific rigor while remaining pragmatic in these studies.

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A307

6:15 PM-7:30 PM

EAT. SLEEP. PLAY. PROSPECTIVE ASSOCIATIONS AMONG HEALTH BEHAVIORS IN A SAMPLE OF US ADOLESCENTS

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Healthful patterns of sleep, nutrition, and physical activity during adolescence are important for later adult health. We examined associations of sleep duration, timing (chronotype, social jetlag), and problems with food intake and physical activity (PA) from 10th to 12th grade in the NEXT Generation Health Study, a diverse, nationally representative prospective cohort of U.S. adolescents (N=2569, 57% female, 45% White). Participants reported previous-week daily servings of fruits and vegetables, whole grains, sugar sweetened beverages (soda), sweet and savory snacks; days/week they ate fast food and engaged in PA; and hours/week of vigorous PA (VPA). Participants reported usual sleep period for school/work days (SD) and free-days (FD), from which duration, chronotype (midpoint of FD sleep period, adjusted for weekend oversleeping) and social jetlag (absolute difference between SD and FD sleep period midpoints) were derived. Sleep problems was a count of reported problems falling asleep, staying asleep and snoring. Separate multilevel linear regression models, using residual maximum likelihood method and accounting for the repeated measures, examined each food and PA type as outcomes and included demographics, survey weights, time, and BMI. Over time, adolescents consumed significantly less fruits, vegetables and fast food, and more whole grains, soda and snacks, and engaged in less PA. Later chronotype was associated with less healthful behavior and more discretionary food intake and was included in models for sleep duration and problems, but not social jetlag due to collinearity. Longer SD sleep duration was associated with less fast food (FEB=-.03, SE=.01). Longer FD sleep duration was associated with less intake of fruit/vegetables (FEB=-.08, SE=.05), and whole grains (FEB=-.04, SE=.01), more soda (FEB=.03, SE=.01), and less PA (FEB=-.08, SE=.02) and VPA (FEB=-.08, SE=.02). Greater social jetlag was associated with less intake of fruit/vegetables (FEB=-.10, SE=.04) and whole grains (FEB=-.08, SE=.02), more snacks (FEB=.04, SE=.02) and less VPA (FEB=-.12, SE=.02). More sleep problems were associated with less intake of fruit/vegetables (FEB=-.14, SE=.05) and more fast food (FEB=.03, SE=.02) and soda (FEB=.07, SE=.02). The pattern of results suggests that greater desynchronization of adolescent sleep period with biologic preferences and sleep problems are associated with less optimal patterns of dietary intake and PA.

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6:15 PM-7:30 PM

NIGHTLY SLEEP QUALITY IS ASSOCIATED WITH DAILY COGNITION IN LATE-LIFE

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Introduction: While some changes in sleep and cognition are considered part of normal aging, older adults often experience poor sleep quality and cognitive decline that goes beyond the scope of normal aging. Attention is a cognitive domain that may be particularly sensitive to alterations in sleep quality. One explanation for this relationship is that poor sleep quality impacts an individual's ability to filter or suppress stimuli. The present study examined between-persons (mean-level) and within-persons (day-to-day) relationships between self-reported nighttime sleep quality and self-reported daytime attention in a community-dwelling sample of older men without neurocognitive disorder.

Methods: Participants included 38 community-dwelling men aged ≥ 65 years ($M_{age} = 75.36$ years, $SD_{age} = 7.51$ years, range = 66–90 years) without a diagnosis of neurocognitive disorder. Participants completed a sleep diary twice daily for one week (7 days). The sleep diary included questions about sleep habits as well as 0–10 rating scales about sleep quality and attention. Sleep quality was assessed using a single item from the morning sleep diary which asked, "How was the quality of your sleep last night?" (0 = "very poor" and 10 = "excellent"). Attention was assessed using a single item from the evening sleep diary which asked, "How was your attention today?" (0 = "poor" and 10 = "excellent"). A two-level multilevel model was parameterized with days (level 1) nested within individuals (level 2) to examine whether nightly sleep quality predicts an individual's daily attention rating.

Results: A single multilevel model predicting self-reported attention revealed the following: (1) older individuals who reported better sleep quality (on average) also reported having better daily attention (on average) [$\beta = 0.64$, $t(248.15) = 10.12$, $p < 0.001$], and (2) following a day of above-average sleep quality, older individuals reported above-average attention [$\beta = 0.16$, $t(259.79) = 2.75$, $p = .006$].

Conclusion: Not only was overall sleep quality associated with self-reported attention, but a night of good sleep was associated with better self-reported attention the following day. Results point to the potential importance of nightly fluctuations in sleep quality for daytime functioning and suggest that interventions aimed at achieving consistent sleep quality are worth exploring as possible methods for improving daytime cognitive functioning in older adults. Given known sex differences in sleep and cognition in aging, studies are also needed to explore this relationship among older women.

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A309

6:15 PM-7:30 PM

THE ASSOCIATION BETWEEN ADOLESCENT SLEEP QUANTITY AND SUGARY BEVERAGE CONSUMPTION: CONSIDERING THE NEIGHBORHOOD CONTEXT

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Background: Research suggests that poor sleep is associated with sugary beverage consumption. Little is known, however, about whether the neighborhood context, such as ease of access to different types of beverages, may impact this association. The current study examined the association between sleep quantity and sugary beverage consumption while accounting for neighborhood availability of these drinks among a national sample of adolescents.

Methods: Data on adolescents aged 12–17 were drawn from the National Cancer Institute's Family Life, Activity, Sun, Health, and Eating (FLASHE) survey (N=1700), a web-based survey administered to parent-adolescent dyads in 2014. Multivariable regression models were used to examine associations between sleep (< 8 hrs, 8–10hrs, >10hrs) and frequency of sugary beverage consumption in the past week (soda, energy drinks, sports drinks; not at all to 3+ times/day) while controlling for the presence of a convenience store (yes/no) and supermarket (yes/no) in the neighborhood and standard sociodemographic variables (age, sex, parent education level, race).

Results: Approximately 35% of participants slept less than the recommended 8–10 hours of sleep ($n = 646$) while 58% reported sleeping the recommended amount of time ($n = 1075$). Sleep is consistently associated with frequency of consumption of soda and energy drinks, such that adolescents who sleep the recommended number of hours (8–10) are less likely to consume soda ($\beta = -.06$, $p = .02$) and energy drinks ($\beta = -.08$, $p = .004$) compared to those who sleep less than 8 hours, controlling for sociodemographic factors. When accounting for the presence of a convenience store and a supermarket in the neighborhood, this relationship remains stable for frequency of both soda ($\beta = -.06$, $p = .01$) and energy drink ($\beta = -.07$, $p = .005$) consumption. We did not find a relationship between sleep and frequency of sports drink consumption in unadjusted and adjusted models.

Conclusions: While effect sizes are small, findings from the current study show a consistent relationship between sleep and *caffeinated* sugary beverage consumption over and above neighborhood access to beverages. Exploring interventions that address sleep and caffeinated sugary beverage consumption may lead to greater success in influencing sleep and sugary beverage consumption behaviors.

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A310

6:15 PM-7:30 PM

LOW HEART RATE VARIABILITY IS A MARKER OF SUBJECTIVE SLEEP REACTIVITY TO STRESS AMONG INDIVIDUALS WITH AN INSOMNIA DISORDER.

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Introduction: Greater exposure to life stressors is associated with higher risk for insomnia. However, there are significant individual differences in sleep reactivity to stress. Heart rate variability (HRV), an index of vagal-dependent parasympathetic activity to the heart, is conceptualized as a marker of emotional and physiological arousal. In our prior work on three different samples of good sleepers, low HRV was associated with greater risk for insomnia symptoms in response to both acute and chronic stressors. The goal of the current study was to examine whether HRV would predict both subjective and objective sleep reactivity to stress among individuals with an insomnia disorder.

Methods: Fifty-five adult participants with an insomnia disorder completed a 14-day stress diary, an overnight polysomnography (PSG), an HRV assessment during resting wakefulness, as well as 2 self-report questionnaires, i.e., the Insomnia Severity Index (ISI) and the Pittsburgh Sleep Quality Index (PSQI).

Results: Resting HRV moderated the association between daily stress exposure and subjective insomnia severity, as assessed by the ISI, $p = .005$, $R^2 = .14$, and PSQI, $p = .02$, $R^2 = .09$. Individuals with lower HRV exhibited greater sleep reactivity to stress than their counterparts with higher HRV. However, HRV did not moderate the association between daily stress exposure and objective (PSG) measures of sleep duration, $p = .27$, $R^2 = .02$, or sleep efficiency, $p = .36$, $R^2 = .01$.

Conclusion: These results indicate that HRV is associated with subjective, but not objective sleep reactivity to stress among individuals with an insomnia disorder.

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A311

6:15 PM-7:30 PM

DAY-LEVEL RECIPROCAL ANALYSIS OF SLEEP AND EATING IN ADULTS WITH UNHEALTHY LIFESTYLE

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Poor sleep health has been causally linked to obesity and is among the modifiable health risk factors implicated in the obesity epidemic. Sleep health is posited to impact weight and cardiometabolic health through multiple pathways, spanning biological, cognitive, and behavioral domains. A primary pathway through which sleep is posited to influence weight and cardiometabolic health is via a tendency for those with poor sleep health to eat more calories and eat a greater proportion of calories from energy dense foods. Research also suggests that the association between sleep health and diet is reciprocal, such that diet can also influence one's sleep. Although compelling, this research has tended to rely upon either tightly-controlled laboratory experiments, which lack ecological validity, or large-scale observational designs using long-term recall, which lack granularity. Research using ecologically valid and granular assessment to evaluate both directions of the relationship between sleep and diet is necessary. Here, we conducted a secondary analysis of baseline data from the Make Better Choices 2 (MBC2) trial to evaluate the reciprocal associations between sleep health and diet. Participants were 212 adults with low physical activity, high sedentary time, and poor-quality diet. Participants monitored and self-reported sleep health and diet daily for approximately seven days through a custom smartphone application. From these daily self-reports, we computed sleep health (quality, duration) and diet (total calories, proportion of calories from saturated fat, fruit and vegetable servings) domains. For each domain and time lag (last night's sleep predicting today's eating, and today's eating predicting tonight's sleep), we computed linear mixed models with a random person-level intercept, controlling for sex, age and BMI. We decomposed predictors into a person-level mean across observations and a deviation from the mean at each observation. Participants were 76% female, 59% non-white minority, mean age = 40.8 years, and 65% obese. None of the models, evaluating either lag or any particular domain combination, provided evidence of a statistically significant association between sleep health and diet (P s > .102, $|Z|$ s < 1.63). These findings suggest that, in adults who eat a poor-quality diet, sleep and diet are not associated at the day level. The results are contrary to past research that has found between-person associations between sleep health and diet. Further research that evaluates various components of diet and sleep using diverse methodologies is necessary to replicate these findings and to clarify these dynamics. Specifically, research should evaluate diet nutritional composition in greater detail, and evaluate various person-level characteristics posited to act as moderators.

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A312

6:15 PM-7:30 PM

DEVELOPING AND TESTING A WEB-BASED PROVIDER TRAINING FOR COGNITIVE BEHAVIORAL THERAPY OF INSOMNIA

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Introduction: Chronic insomnia is a common and debilitating disease and a risk factor for significant medical morbidity, mental health problems, and workplace difficulties. Cognitive behavior therapy for insomnia (CBT-I) is the current gold standard treatment for insomnia. However, there is a critical lack of providers trained in CBT-I, in part due to a bottleneck in training availability and the time and cost associated with the current training platforms. Our team developed and evaluated CBTiweb.org, a web-based provider training course for CBT-I.

Methods: To develop an effective training platform, CBTiweb.org first underwent alpha- and beta-testing. Feedback from alpha- and beta-testers was used to optimize the course for use in the feasibility comparison study. The comparison study recruited licensed providers (n=44) to be randomly assigned to complete the online CBT-iweb.org course (n=21) or in-person training (n=23) of the same materials and information. Comparison study participants completed a Computer System Usability Questionnaire (CUSQ) as well as investigator developed Continuing Education (CEU) type pre/post-questionnaires to assess knowledge acquisition.

Results: Linear mixed-effects modeling revealed within-subjects effects ($F(24.55) = 135.16$, $p < 0.001$) where there was a significant increase in knowledge acquisition (baseline = 59% correct, post-training = 78% correct) when collapsed across both groups. The interaction effects were non-significant ($F(24.55) = 0.10$, $p = 0.760$), which indicated similar gains (20%) in knowledge across both groups and demonstrated equivalence between the in-person and the CBTiweb.org training formats.

Conclusion: Alpha and beta testers of CBTiweb.org reported high levels of satisfaction with the site and provided feedback on several areas for improvement. Based on their feedback, appropriate updates were made to the website platform. These results suggest the final CBTiweb.org product was successful in training clinicians given the success of licensed providers on knowledge assessments following completion of the web-based training. CBTiweb.org is an efficient and effective training platform for clinicians to gain knowledge and competence in the most effective treatment for insomnia.

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NIH-FUNDED CBPR: SELF-REPORTED COMMUNITY PARTNER AND INVESTIGATOR PERSPECTIVES

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The community-based participatory research (CBPR) approach across health contexts has matured greatly over the last 20 years. Though contributions to the literature on the development and effectiveness of CBPR interventions have grown, the number of publications on the function and evaluation of actual community research partnerships has not kept pace. To help address that gap, we searched National Institutes of Health archival data and identified a set of 489 CBPR projects including collaboration-building, exploratory/pilot, research, and program project grants.

We saw a need to understand the experiences of researchers and community members to understand whether and how they value this approach. Literature reviews in CBPR are plentiful; some CBPR reviews suggest that there is insufficient literature on the organizational capacities associated with ongoing successful CBPR partnerships. To help resolve that disparity, we proposed two research questions:

RQ1: What are the perceptions of researchers who have conducted NIH-funded CBPR projects?

RQ2: What are the perceptions of community members who have been partners in NIH-funded CBPR projects?

More specifically, perceptions of the following were assessed: (1) prior history of collaboration between researchers and community members, (2) funding sufficiency, (3) prior history of collaborations among community organizations, (4) researcher views of community engagement, and (5) community partner views of community engagement.

We found community partner contact information commonly was absent from grant records and contacted principal investigators (PIs) for community-partner contact information. Subsequently, we built upon established measures to ask principal investigators and community partners for their perceptions of participation in NIH-funded CBPR projects. Many principal investigators and community partners reported existing collaborations—between academicians and community organizations as well as among community organizations. Partners tended to agree on the appropriateness of funding levels to accomplish projects and on the community partners' ability to recruit and retain participants, collect data, and implement interventions. Partners differed in perceptions of participation in research design, data analyses, manuscript and presentation production, and dissemination of findings. Suggestions include collection of lead community partner information without undue burden and increased standard education and involvement of community organizations in research vocabulary and practices.

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PHYSICIAN CHARACTERISTICS ASSOCIATED WITH HEALTHCARE UTILIZATION AMONG 1.5- AND SECOND-GENERATION CAMBODIAN AMERICAN WOMEN

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Cambodian Americans face significant psychosocial challenges, including low educational attainment, poverty, and mental health problems. Furthermore, health problems such as cardiovascular diseases and cancer are prevalent in this population. Yet, little is known about the social influences of healthcare utilization among Cambodian Americans. The present study focused on healthcare utilization among younger-generation Cambodian American women. Specifically, this study examined the how provider characteristics are associated with healthcare utilization. This qualitative study was based on data from individual interviews of 19 Cambodian American women who were either US-born or who were foreign-born and arrived in the US by age six years. Results indicated that 1) feeling comfortable with the provider, 2) provider having a “nice” personality, 3) feeling valued by one’s provider, 4) provider’s cultural competence, and 5) provider gender were important factors to Cambodian American women. These results are described and interpreted within social, cultural and historical contexts of racism, sexism, cultural stereotypes, refugee experience, legacy of trauma, and healthcare policy. Practitioners can draw from the results of this study to enhance treatment delivery. Based on the study’s results, researchers may identify directions for further investigation.

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BULLYING EXPERIENCES, BODY ESTEEM, AND THE MODERATING ROLE OF WEIGHT STATUS AMONG ADOLESCENTS

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Introduction: Adolescents with overweight or obesity (OW/O) are more likely to be victims of verbal, physical, and relational bullying than their average-weight peers. Adolescents with OW/O may also have lower body esteem and body dissatisfaction. The relationship between bullying, body esteem, and body dissatisfaction is unclear, and may differ based on adolescent weight status.

Methods: Adolescents between 10 and 16 years of age reported demographic characteristics and completed surveys. Anthropometrics were objectively assessed. Bullying was assessed using the Personal Experiences Checklist, which includes four subscales of bullying (cultural, cyber, relational, and physical) and a total score (total bullying). Body esteem was assessed using total score on the Body Esteem Scale, and body dissatisfaction was assessed using the Body Image Assessment for Pre-Adolescents, operationalized as the discrepancy between current figure and ideal body figure. Linear regression models were used to examine the relationships between bullying, body esteem, and body dissatisfaction, and an interaction term (alpha level for significance of interaction = .10) was included to test whether total bullying and weight status (normal vs. OW/O) moderated these relationships, adjusting for confounders.

Results: In total, 338 adolescents provided complete measures. On average, adolescents were 12.5 ± 1.9 years old, 59.0% were White, 35.1% were African American, and 5.9% were other; also 50.3% had OW/O. Total bullying was inversely associated with body esteem ($p = 0.002$) and positively associated with body dissatisfaction ($p = 0.04$). OW/O status was related to lower body esteem ($p = 0.001$) and greater body dissatisfaction ($p = 0.01$). The interaction term (total bullying and weight status) was significant for body esteem and body dissatisfaction ($ps < .08$). Models stratified by weight status tested all bullying subscales in the same model. Among adolescents with normal weight, relational bullying was related to lower body esteem, while physical bullying was related to greater body esteem. In adolescents with OW/O, relational bullying was related to lower body esteem. For body dissatisfaction, cyberbullying was significantly related to less body dissatisfaction among adolescents with normal weight but was not related to body dissatisfaction among adolescents with OW/O.

Conclusions: In this sample, the relationship between bullying experiences, body esteem, and body dissatisfaction differed by adolescent weight status. Cyberbullying was related to less body dissatisfaction among adolescents with normal weight but not those with OW/O, whereas relational bullying was negatively related to body esteem for adolescents regardless of weight status. Additional investigation into differential bullying experiences by weight status is warranted to find tailored solutions for adolescent health.

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IMPACT OF EGOCENTRIC NETWORKS ON PHYSICAL, EMOTIONAL, AND SEXUAL VIOLENCE AMONG A SAMPLE OF COLLEGE STUDENTS

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Introduction: Intimate partner violence (IPV) is an increasing concern on college campuses. While research has identified individual-level risk factors related to IPV among college students (e.g., hooking up, alcohol use, gender), less has investigated interpersonal relationships and IPV. The purpose of this study was to use social network analysis, an innovative approach to exploring social connections in relation to behaviors and outcomes, to understand how social connections relate to the odds of a college student experiencing IPV.

Methods: 697 students provided demographic and behavioral data (individual-level variables) as well as information regarding up to 5 individuals they felt closest to in their life (egocentric network variables) via an online survey. Hierarchical logistic regression analyses were conducted using individual-level variables and network variables to predict a history of physical, emotional, and sexual violence among this sample.

Results: Egocentric network variables added 8.8% - 11.4% of explained variance in predicting the odds of sexual (Nagelkerke $R^2 = .303$, $p < .001$), physical (Nagelkerke $R^2 = .280$, $p < .001$), and emotional violence (Nagelkerke $R^2 = .203$, $p < .001$). Being connected to people who have a history of IPV significantly increased a student's odds of indicating a history of physical (OR = 1.034, $p < .001$), emotional (OR = 1.023, $p < .001$), and sexual violence victimization (OR = 2.879, $p < .010$) themselves. Having more disconnected egonetworks was related to sexual violence victimization (OR = 1.305, $p = .017$), while being connected to more people of the same gender was related to emotional violence victimization (OR = 1.988, $p = .043$). Gender and hooking up were related to all types of IPV.

Conclusion: Egocentric networks were important in explaining history of IPV in this sample. Notably, people with a history of violence tend to populate one another's personal networks. These findings add to the current literature that largely focuses on individual-level risk factors related to IPV. The way college students' close networks are composed and structured help in understanding IPV in this population, and should be considered in prevention and reactionary efforts on college campuses.

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NEIGHBORHOOD WALKABILITY IS RELATED TO SOCIAL HEALTH AMONG ADULTS

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Objectives: Neighborhood walkability is related to multiple health behaviors. Present analyses examined how neighborhood walkability was related to three social health outcomes.

Methods: Using cross-sectional data from the Neighborhood Quality and Life Study (NQLS), we analyzed 1,745 adults, ages 20-66, recruited from Seattle and Baltimore regions. Social outcomes of Social Interaction (with neighbors), Sense of Community (social cohesion) and Informal Social Control (social capital) were measured by survey, and walkability around each participant's home (1km buffer) was based on a GIS index of residential density, street intersection density, and mixed land use. Two mixed models were conducted for each outcome, with and without adjusting for walkability-related reasons for selecting the neighborhood (self-selection). Covariates included sex, age, socioeconomic status, white/nonwhite ethnicity, marital status, and time living in the neighborhood.

Results: Neighborhood walkability was positively related to Social Interaction both with adjusting for self-selection ($p = .008$) and without ($p < .001$). Sense of Community was positively associated with walkability only without adjusting for self-selection ($p = .009$). Informal social control had a negative association with walkability when self-selection was included in the model ($p = .036$).

Conclusions: Walkability may facilitate social interaction with neighbors. Adults may choose walkable neighborhoods because of social cohesion. The "negative" nature of the Social Control items (e.g., take action if children are skipping school) may account for the inverse association with walkability. In addition to facilitating physical activity, neighborhood walkability may benefit some aspects of social health.

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ASSESSMENT STRATEGY TRENDS IN SOCIAL DETERMINANTS OF HEALTH

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The Centers for Disease Control and Prevention reported that social and environmental factors (20%) and behavior (40%) contribute to premature death more than inadequate clinical care (10%) and genetics (20%-30%) (Adler & Prather, 2015). Despite the limited contribution of clinical care, healthcare payers, systems, and providers are increasingly responsible for the overall health of their patients and the associated costs (Santilli & Vogenberg, 2015). As a result, these stakeholders are progressively utilizing social determinants of health (SDoH) assessment strategies to understand patients' social needs and to assess intervention effectiveness.

To identify which assessment strategies and interventions payers, healthcare systems, and providers use to assess and address patient SDoH, the authors conducted a systematic literature review of 6,611 unique studies identified through MEDLINE, MEDLINE in-Process, EMBASE, PsycINFO, and CINAHL (published between January 2011 and June 2019). Included studies had an SDoH assessment or intervention that was facilitated by a US healthcare payer, system or provider. SDoH was defined using the Office of Disease Prevention and Health Promotion's Healthy People 2020 framework and included five key areas: Economic stability, Education, Social and community context, Health and health care, and Neighborhood.

This poster focuses on the 261 studies identified that included a relevant SDoH assessment used in patient screening or an intervention. Additional information on SDoH interventions identified in the review are presented elsewhere. A variety of assessment strategies, including brief questionnaires and lengthy structured scales, in both cross-sectional and interventional studies were identified. Assessments were used with general clinical populations and in indications such as cancer, depression, diabetes, heart failure, HIV, and pregnancy. Assessment strategies tended to focus on one SDoH domain; the health and health care domain was most represented, with frequent use of health literacy assessments such as the Newest Vital Sign and REALM. Social support and health-related knowledge were also commonly assessed. The majority of studies were from a health-care systems or provider perspective, which may be related to a publishing bias for this stakeholder type. Future efforts to increase accessibility of non-published information on SDoH assessments being used in practice will improve collaboration across stakeholders.

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CASCADING EFFECTS OF CHILDHOOD ABUSE ON PHYSICAL HEALTH ISSUES IN LATER ADULTHOOD THROUGH ANXIETY AND POOR DAILY SLEEP QUALITY

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Childhood abuse is a prevalent and serious public health issue worldwide and an important type of early life stress to consider given its lasting effect on the individual's mental and physical health throughout the life-course. Childhood abuse is one of the main environmental risk factors in the development of trait anxiety. Also, the effect of childhood abuse on sleep quality in adulthood is well documented. Furthermore, while sleep, as a process that restores the body's ability to self-regulate and keeps the body's hormones in balance, plays a vital role in physical health over the lifespan, individuals with higher anxiety were found to experience poorer daily sleep quality. Given the link between childhood abuse, trait anxiety, daily sleep quality, and physical health issues, we examined whether childhood abuse affected physical health issues in later adult life and then explored the potential, sequential mediating roles of trait anxiety and daily sleep quality in these relations. This study utilized the Midlife in the United States Study (MIDUS) 2 (wave 2) project 4: Biomarkers (data collected 2004-2009) to measure childhood abuse, trait anxiety, and daily sleep quality; and MIDUS 3 (wave 3) project 1: survey (data collected 2013-2014) to measure physical health issues in later adult life ($n=281$, $M_{age} = 56.38$ in wave 2). In the current analysis, childhood abuse was treated as a latent variable with three indicators including emotional abuse, physical abuse, and sexual abuse. Physical health was also treated as a latent variable with three indicators including functional limitations in activities of daily living, functional limitations in instrumental activities of daily living, and self-rated physical health. To test mediation effects, Mplus (version 8) was used with 5000 bootstrap samples for significance testing. Individuals who reported a higher level of childhood abuse reported a higher level of physical health issues in later adulthood. Furthermore, individuals who reported a higher level of childhood abuse reported a higher level of trait anxiety and a lower level of daily sleep quality leading to an increase in physical health issues. The results highlight the cascading effects of childhood abuse on serious health consequences over the lifespan through trait anxiety and poor daily sleep quality. The current study suggests that it is critical to raise public awareness that recognizes the seriousness of childhood abuse due to its lasting impact later in life by creating a vicious cycle of repeated health issues. Preventions and intervention programs targeting childhood abuse are recommended. Potential clinical implications of our findings could be that adults may benefit from intervention efforts that minimize the effect of childhood abuse and break the vicious cycle of health issues created by adverse childhood experience.

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DAILY ASSOCIATION BETWEEN PRESENTEEISM AND MOMENTARY MOOD, PHYSICAL SYMPTOMS, AND PAIN

Kaori Suwa, BS¹, Akifumi Kishi, PhD¹, Kazuhiro Yoshiuchi, MD, PhD², Yoshiharu Yamamoto, PhD³¹Educational Physiology Laboratory, Graduate School of Education, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; ²The University of Tokyo, Graduate School of Medicine, Department of Stress Sciences and Psychosomatic Medicine, Bunkyo-ku, Tokyo, Japan; ³Educational Physiology Laboratory, Graduate School of Education, The University of Tokyo, Bunkyo-ku, Tokyo, Japan**Background:** Presenteeism refers to the decrease in productivity in employees who are present at work but not functioning at full capacity due to health conditions. The majority of studies on presenteeism to date have used health and productivity data collected through questionnaires, with a recall period between a week and a month, and have focused on between-individual differences. Presenteeism, however, may change from day to day and reflect momentary changes in health conditions, which may be captured by daily subjective symptoms. Utilizing a smartphone-based Ecological Momentary Assessment (EMA) technique, this study investigated the daily associations between presenteeism and mood, physical symptoms, and pain within individuals.**Methods:** Twenty-five employees from nursing and health care (35.9 ± 9.0 years; mean \pm SD) completed EMA on their mood, physical symptoms, and pain 5 times per day over a two week period. Daily presenteeism was additionally evaluated once a day at the end of their workday, using questions extracted from the Health and Work Performance Questionnaire (HPQ). Recalled presenteeism was assessed using the original HPQ, with a recalled period of one month. We first calculated intraclass correlation coefficients between recalled presenteeism and the mean of daily presenteeism in the whole study population. Secondly, we used two level hierarchical linear models (HLM) to examine the effect of the mean level of the mood, physical symptoms or pain for a day on presenteeism of the day adjusted by sex and age. Given the known relevance of depression and lower back pain with presenteeism, we further applied multivariate HLM to examine the effect of these factors on daily presenteeism.**Results:** Consistency and agreement between recalled and the mean of daily presenteeism were both 0.58 ($p < 0.01$). Greater daily presenteeism (i.e., less productivity) was significantly associated with increased levels of depression ($p < 0.01$), anxiety ($p < 0.01$), and lower back pain ($p < 0.05$) and with decreased levels of motivation ($p < 0.01$) and concentration ($p < 0.01$). Multivariate HLM revealed that only depression remained to have a significant influence on presenteeism ($p < 0.05$).**Conclusion:** This study confirmed a fluctuation of presenteeism on a daily basis. Daily presenteeism may be specifically influenced by negative aspects of mood rather than physical symptoms including pain, suggesting that mood status may be an effective target to improve productivity in the workplace.

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EXPERIENCES WITH STRESS AMONG AFRICAN AMERICAN MEN LIVING WITH TYPE 2 DIABETES: A QUALITATIVE INQUIRY.

Ledric Sherman, Ph.D., M.A.¹¹Texas A&M University, College Station, TX**Introduction:** Self-managing type 2 diabetes (T2D) is critical but often presents a challenge among African American men. Stress may exacerbate both mental and physical problems, which can lead to poor self-management; however, the evidence is sparse. The purpose of this study is to examine the relationship the role of stress in type 2 diabetes management among a prospective group of African American men living in the southern United States.**Methods:** Nineteen African American men with T2D were recruited from barbershops and churches. Interviews were conducted using a semi structured interview guide. Transcripts were analyzed using a phenomenological approach and focused on identifying common themes describing the responses regarding any stress that the participants have pertaining to living with and managing type 2 diabetes.**Results:** The themes that emerged from the participant responses are: (1) experiencing less stress, (2) stress not attributed from diabetes, (3) avoid thinking about stress, and (4) some stress is prevalent. Overall, participants expressed either that diabetes was not attributing to the stress that they have or that they have less stress than they did prior to being diagnosed with type 2 diabetes.**Discussion & Conclusion:** In this sample of African American men, stress became a factor for some participants when considering the complications that can occur from diabetes. These findings suggest the need for key considerations to only incorporate general information about diabetes and stress management, but should be gender and culturally relevant to African American men.

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EXPLORING PERCEPTIONS OF SELF-CARE AMONG UNDERGRADUATES AT A MIDWESTERN UNIVERSITY

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Background: College counselors are reporting record numbers of student visits for a variety of mental health problems, with noted rises in depression, anxiety, and overall distress (Center for Collegiate Mental Health [CCMH], 2016). Since a student's overall wellbeing ultimately impacts academic success, health professionals need to better understand the perceptions of and barriers to engaging in protective self-care activities among this population.

Methods: An electronic survey was sent to a random sample of 4,997 undergraduate students at a public, mid-size university in the Midwest with a response rate of 7% (n=370). The 26-item survey included both Likert-scale and open-ended questions to solicit perceived barriers. Barriers were then coded and categorized during post-hoc analysis.

Results: *Nutrition:* Only 31% of respondents said they ate at least 3 servings of vegetables while 41% said they ate 2 servings of fruit on most days of the week. The majority (61%) also agreed they eat more processed, junk foods when feeling stressed. The most common barriers to eating healthfully were lack of time (n=155), lack of money (n=137), lack of accessibility (n=117), and personal preference for unhealthy foods (n=46). *Exercise:* When asked about current exercise, 43% agreed they exercised at least 30 minutes, 5 days a week. The most common barriers to exercise were lack of time (n=193), school work (n=101), lack of motivation (n=78), and no energy (n=31). *Sleep:* While not the majority, 39% agreed they regularly drink caffeine to maintain alertness and 37% agreed they regularly take naps to function. The most common barriers to sleep were school work (n=215), lack of time (n=123), social obligations (n=61), stress (n=59), and digital distractions (n=50). *Spirituality:* Only 38% agreed spiritual or religious beliefs were important to their overall health. The most common barriers to feeling connected spiritually were time (n=97), not identifying as being religious or spiritual (n=90), not feeling like religion or spirituality was a priority (n=40), and not feeling comfortable practicing their religion at school (n=31).

Conclusions: There are numerous perceived barriers to engaging in self-care activities among undergraduate participants in this study. While the low response rate limits generalizability, we suggest that addressing self-care perceptions should be an important part of future prevention programs among this increasingly vulnerable population.

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ASSESSING WOMEN'S SEXUAL MINORITY STRESSORS IN DAILY LIFE: DOES THE WAY WE ASK THE QUESTION MATTER?

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Researchers are often interested in using ecological momentary assessment (EMA) to assess real-world, naturally occurring experiences. However, there are few well-validated measures to assess constructs via EMA, and thus, researchers are often left to create items for individual studies. One area lacking well-validated EMA measures is the daily assessment of sexual minority stressors (SMS), or the unique stressors sexual minority individuals (e.g., lesbian, gay, bisexual) experience due to their marginalized status. Previous research suggests the way researchers ask EMA questions about general stressors is important. Therefore, the aim of this study was to describe rates of reported SMS using different question formats. As part of a study of same-sex female couples, 321 sexual minority women ages 18-35 completed daily surveys for 14 consecutive days regarding their experiences and health behaviors. To assess daily SMS, two question types used in previous research were asked each morning. Participants were first asked a general question about if any negative events related to being a sexual minority occurred the previous day (yes/no). Then, a published 8-item daily SMS measure that inquired about specific experiences (e.g., hearing anti-LGBT talk, being made fun of) was administered. In total, participants provided data on 4,008 days. Results indicated that in response to the general dichotomous question, participants reported experiencing negative events on 5.2% of days (209 days). In contrast, in response to the 8 specific experiences, participants reported at least one on 19.5% of days (788 days). Specific experiences ranged in occurrence from 1.2% of days (49 days; being explicitly threatened) to 10.2% of days (411 days; hearing anti-LGBT talk). Instances when participants denied a negative event in the general item but subsequently endorsed a specific experience were explored. Given the discrepant reports among the two question types, these data suggest sexual minority women will report more SMS experiences in response to questions about specific events or experiences as compared to a single general question inquiring about negative events or stressors. These findings have methodological implications for future studies that assess daily SMS. Given that SMS may contribute to health disparities, accurate assessment of real-world experiences of SMS is essential to further our understanding of health disparities among sexual minority individuals.

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RISK AND SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH OPIOID USE AMONG AFRICAN AMERICAN FAITH-BASED POPULATIONS

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An estimated 1.7 million people suffer from an opioid overdose each year. Rates of opioid abuse/overdose tend to be higher in Whites. However, in the Midwest, which has observed some of the most rapid increases in opioid abuse/overdose, African Americans (AAs) are more likely to die from an opioid overdose compared to Whites (e.g., in Missouri, 31.5 per 100,000 versus 15.5 per 100,000, respectively) despite lower rates of use. Given that AAs are also disproportionately burdened by opioid abuse risk factors (e.g., low income, rural residence) and are less likely to seek substance abuse treatment, culturally-appropriate interventions that address opioid use should be considered. AA churches may be an ideal setting for opioid prevention and treatment efforts since it is a highly trusted institution, and AAs have the highest rate of church attendance among all racial/ethnic groups. This study examined traditional and religiosity predictors (e.g., insurance status, gender, history of pain, other substance use behaviors, religious behaviors) of self-reported lifetime opioid use using survey data from 4 AA churches (N = 250 church members and community members using church outreach ministry services) that participated in the Taking It to the Pews (TIPS) study, a faith-based HIV/STD/Hepatitis C education and testing intervention in the Kansas City metropolitan area. This is the first study to examine opioid use in an AA church-affiliated population. Participants were predominantly female (71%, N=178) and church members (74%, N = 184), with an average age of 47 (SD = 12.03). 79% of participants attended church weekly or more. 53% of participants reported prescription opioid use (ever), 11% reported crack/cocaine/heroin use (ever), and 60% reported marijuana use (ever). 74% reported a lifetime history of severe pain (e.g., from injury, medical procedure, illness) requiring medical intervention. Preliminary analyses indicated that there were significant relationships between lifetime opioid use and Medicaid status, church attendance, pain history, history of crack/cocaine/heroin use, history of marijuana use, and a history of binge drinking. Gender was not related to lifetime opioid use. Logistic regression analyses indicated that those who reported lifetime opioid use were less likely to have Medicaid (OR = .22, p = .004). They also attended church more frequently (OR = 1.29, p = .02), had a history of severe pain (OR = 24.17, p < .001), a history of crack/cocaine/heroin use (OR = 4.42, p = .03), and a history of marijuana use (OR = 2.70, p = .01). These findings suggest that AA churches have great potential to reach church-affiliated populations, especially church members, living with chronic/acute pain with lifestyle interventions (e.g., physical activity and stress management classes) for pain management and opioid abuse recovery programs appropriately tailored for faith-based settings.

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CANNABIS USE THROUGH E-CIGARETTES, INCLUDING JUUL

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Introduction: Cannabis and tobacco use have been correlated for years. Electronic cigarettes (e-cigarettes) are an increasingly popular tobacco product, particularly among youth and young adults, largely due to the popularity of the device JUUL. Though JUUL is a closed system, JUUL and other e-cigarettes can be modified and used with cannabis. E-cigarettes may appeal to those who otherwise may not have used cannabis, putting them at risk for poor academic/professional performance, interpersonal problems, and risk-taking behaviors. Little research has explored e-cigarette use with cannabis, particularly with the emergence of JUUL.

Methods: Data were collected from a nationally representative panel of U.S. adults aged 18-64, with an oversample of JUUL users (n=3415). Ever e-cigarette users were asked about ever and current (past 30-day) e-cigarette use with cannabis (marijuana or liquid THC oil). Past 12-month JUUL users were asked about ever JUUL use with cannabis. Weighted multivariate logistic models examined differences in e-cigarette cannabis use controlling for age, gender, education, race/ethnicity, smoking status, and current e-cigarette use.

Results: Among all adults who ever used e-cigarettes (n=892), 31% ever used e-cigarettes with cannabis. Compared to those 45-64 years old, e-cigarette users aged 25-34 had greater odds of ever using e-cigarettes with cannabis [adjusted odds ratio (aOR)=2.51; 95% confidence interval (CI): 1.43-4.42]. Compared to non-current users, current e-cigarette users also had greater odds of ever using e-cigarettes with cannabis (aOR=2.36, CI: 1.56-3.57). Among adult ever e-cigarette with cannabis users (n=360), almost half (49%) currently used e-cigarettes with cannabis. Compared to non-current e-cigarette users, current e-cigarette users had greater odds of current e-cigarette use with cannabis (aOR=5.13; CI: 2.47-10.67). Among past 12-month JUUL users (n=472), 21% ever used JUUL specifically with cannabis, which did not differ by current tobacco use status or demographics.

Conclusion: These data suggest that nearly a third of adults ever using e-cigarettes have used them with cannabis. Current e-cigarette users may be more likely to use e-cigarettes with cannabis, though not necessarily JUUL with cannabis. As the e-cigarette market evolves, innovative policy and programs are needed to reduce the uptake of cannabis with these products to protect against co-use with tobacco and other cannabis behavioral health outcomes.

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CONFIRMATORY FACTOR ANALYSIS OF THE DRINKING CONTEXT SCALE FOR USE WITH AFRICAN AMERICAN YOUNG WOMEN WHO USE ALCOHOL

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The Drinking Context Scale (DCS; O'Hare, 1997) was developed to measure one's expectancies concerning the likelihood of excessive alcohol use across various situational contexts. This 9-item questionnaire was validated in a majority White (93.3%) undergraduate sample, which yielded three subscales: a) convivial drinking, b) negative coping, and c) intimate drinking. While high prevalence of heavy alcohol consumption is a major health concern among young women, alcohol use behaviors among African American women differ from women with different racial identities. The aims of the current study were to a) confirm the factor structure of the DCS in a community-based sample of African American young women who drink alcohol and b) assess concurrent validity with a measure of heavy alcohol consumption (AUDIT-C; Saunders et al., 1993). This study analyzed baseline data from the N-LITEN study, an STI/HIV prevention intervention for African American young women. Participants were women who self-identified as African American ($N = 560$), were 18-24 years old (M age = 20.58, $SD = 1.89$), consumed alcohol ($\geq 3x$) in the past 90 days, and reported condomless vaginal or anal sex with a male partner in the past 90 days. Confirmatory factor analysis assessed the goodness of fit of the three-factor model. Normed-fit index (NFI), Tucker Lewis index (TLI), comparative fit index (CFI), root-mean-square error of the approximation (RMSEA), and standardized root-mean-square residual (SRMR) were employed. AUDIT-C total score was included as a dependent variable in the final structural equation model (SEM) to determine concurrent validity. A one-, two-, and three-factor model were fitted to the data in the same manner as the original validation study. The three-factor model showed the best model fit, $\chi^2 (25, N = 560) = 103.13$, $p < .001$, NFI = 0.97, TLI = 0.96, CFI = 0.98, RMSEA = 0.07, SRMR = 0.04. The SEM model displayed good model fit, $\chi^2 (51, N = 560) = 150.40$, $p < .001$, NFI = 0.96, TLI = 0.97, CFI = 0.97, RMSEA = 0.06, SRMR = 0.04, such that higher DCS scores were associated with greater heavy alcohol consumption, $B = 0.56$, $SE = 0.04$, $p < .001$, accounting for 61.6% of the variance in AUDIT-C scores. This study confirmed the three-factor structure of the DCS and moderate concurrent validity with the AUDIT-C was found within this sample suggesting appropriateness for use among African American young women.

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PROTECTIVE AND RISK FACTORS FOR INCREASED ALCOHOL USE IN COLLEGE STUDENTS ON THE U.S./MEXICO BORDER

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Problematic alcohol use among college students continues to be a problem in the U.S. and has previously been found to be a possible coping mechanism for underlying psychological illnesses (Metzger et al. 2017). However, parental behavior associated risk factors for problematic alcohol use during young adulthood have yet to be thoroughly investigated in young adults on the U.S./Mexico border. The present study assessed the relationships between participants' past month alcohol consumption and the likelihood of having alcoholic parents, adverse childhood experiences, reported symptoms of depression, anxiety and stress, participants aggressive behaviors, resiliency, self-efficacy and coping skills in primarily Latinx college students. College students ($N=179$; M age=21.56 years, $SD=4.62$; 76% female; 83.5% Hispanic/Latinx, 9.3% White) provided consent and completed the following assessments: demographics, The Children of Alcoholics Screening Test (CAST), The Depression, Anxiety and Stress Scale (DASS), the Adverse Childhood Experiences Scale (ACES), The Buss-Perry Aggression Questionnaire (BPAQ), The Brief Resilience Scale (BRS), The General Self-Efficacy Scale (GSE), The Collectivistic Coping Styles Measure (CCSM), reported if their parents have used alcohol, and reported the number of times they used alcohol within the past month. Linear regression models were used to test the association between Past Month Alcohol Usage ($F(24, 154) = 1.94$, $p < .01$) and the reported protective and risk factors. Holding other predictors constant, increased past month alcohol consumption was positively associated with physical abuse ($\beta=4.00$, $p < .01$), feelings of being unloved ($\beta=4.95$, $p < .01$), mother being physically abused ($\beta=3.76$, $p < .05$), and anger ($\beta=.65$, $p < .05$), and negatively associated with having a house member go to prison ($\beta=-4.45$, $p < .05$). That adverse childhood experiences, specifically of physical abuse, feeling unloved/unsupported, and mothers being physically abused, and feelings of anger, are associated with increased alcohol intake suggests that students may benefit from trauma intervention efforts. These efforts should include parents and occur prior to the onset of drinking related problems. Additionally, that having a house member go to prison is associated with reduced alcohol consumption, suggests students may learn from familial mistakes while under the influence. Future studies should be prospective in nature and include multiple familial perspectives.

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A TRANSFORMATIVE JOURNEY: NURSES WITH SUBSTANCE USE DISORDER WHO COMPLETE AN ALTERNATIVE TO DISCIPLINE PROGRAM

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Substance use disorder (SUD), defined as the misuse of drugs and/or alcohol, affects approximately 10% of the three million Registered Nurses (RNs) in the US. In addition to general risk factors (for example, family history, history of physical, sexual abuse), RNs have specific risk factors. These include easy access to controlled substances, stressful work environments, and lack of education about SUD in nurses. SUD in nurses is a significant issue because of the potential for impaired practice and patient endangerment. State nursing regulatory agencies have developed programs, called Alternative to Discipline Programs (ADPs) to address this issue. ADPs remove impaired RNs from practice, facilitate treatment during the acute phase of SUD, and return RNs to practice in a structured, monitored work environment.

Research related to RNs in ADPs has addressed characteristics of nurses in ADPs, impact of ADPs on stress and life-burden, and the self-integration that occurs during participation in an ADP. Little research addresses the actual lived experience of nurses who complete an ADP. This phenomenological study was conducted to explore that lived experience. The question that guided this research was: What is the meaning and significance of the lived experience of RNs with SUD who complete an ADP? Van Manen's six research activities guided this inquiry and Colaizzi's seven step method was used for analysis.

Three RNs participated. Findings resulted in five main themes and four subthemes that provide a rich description of these RNs experiences. Findings, validated through participant review, provided the essence of completing an ADP. This essence was *A Transformative Journey*. Themes common to the participants' journeys were 1) Leap of Faith, 2) Pain of Surrender, 3) Feelings of Drowning, 4) Structured Sobriety, and 5) Nurse Affiliations. Themes represent the transformation participants underwent during the ADP and the importance of other nurses in the journey. Subthemes included 1) Future Nurses at Risk, 2) Hidden Pain, 3) Tell Me Why, and 4) Protecting One Another.

Understanding the meaning and significance of the lived experience of RNs who complete an ADP has implications for nursing practice, education, and research. Implications for practice include provision of a voice for nurses who complete ADPs and creation of a supportive practice culture. Implications for nursing education include increased curricular content related to risk factors for SUD that are specific to nurses, and recognition of SUD in students and graduates. Implications for research include expansion of this study and studying risk factors for nursing students. This was a small, homogenous group of participants. Research with more, and diverse, participants would expand knowledge about RNs who complete ADPs. SUD in nurses can begin in nursing school and more knowledge about student risk factors is needed.

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STRATEGIES TO IMPROVE TREATMENT UTILIZATION FOR SUBSTANCE USE DISORDERS: A SYSTEMATIC REVIEW OF INTERVENTION STUDIES

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Background: Despite a growing body of research on screening and brief interventions, very little is known about how to efficiently and effectively make treatment referrals. The efficacy of clinical interventions to improve referrals and promote treatment utilization for substance use disorders (SUD) remains unclear.

Objective: The present study systematically reviewed the literature on interventions to improve referrals and promote treatment utilization.

Methods: We conducted a systematic review of clinical intervention studies (published in English between 2000-2017) reporting outcomes relevant to the utilization of specialty substance use treatment. We excluded studies that did not report treatment utilization outcomes (i.e., treatment initiation, attendance, engagement). Results of randomized controlled trials (RCTs) were synthesized. Risk of bias was assessed using Cochrane guidelines. Proportions of positive to negative utilization outcomes were calculated for each low-bias RCT. Interventions were categorized by theory-based approach. Within each intervention category, we report the number of studies with positive effects for at least half of relevant outcomes.

Results: Fifty-two RCTs were identified, with 35 (67.3%) measuring treatment initiation, 39 (75.0%) measuring attendance, and 4 (7.7%) measuring engagement. Twenty-three RCTs (44.2%) had low risk of bias and were synthesized. Strongest effects were found on treatment utilization with 35% overall positive studies and most consistent findings in collaborative care (67%) and cognitive-behavioral (100%) intervention categories. Overall, 29% of treatment attendance studies were positive with twelve-step promotion showing the strongest results (50%). Only one low risk study looked at engagement, finding strong results (75% of outcomes) for twelve-step promotion.

Conclusions: Interventions focused on collaborative/coordinated care and CBT were most effective at increasing SUD treatment initiation, while twelve-step promotion interventions were more effective at increasing sustained attendance and engagement. Interventions and outcomes were largely heterogeneous and often poorly defined. Further research is needed to develop, define, and test robust models of treatment utilization to improve the efficacy of referrals to treatment and to identify precisely which intervention components are most effective in promoting treatment utilization at each step of the treatment continuum.

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BLACK FIRST-YEAR COLLEGE STUDENTS' ALCOHOL OUTCOME EXPECTANCIES: IMPLICATIONS FOR INTERSECTIONAL ALCOHOL INTERVENTIONS

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First-year college students are a risk group for heavy episodic drinking. On average, more than 42% of first-year college students reported one or more episodes of heavy episodic drinking in the past month. Alcohol outcome expectancies (AOEs), such as tension reduction, disinhibition, social assertiveness, and physical and sexual enhancement, are the greatest predictors of alcohol use during the first year of college. Given the lower rates of alcohol use among Black students, understanding their AOE may be useful in informing culturally relevant interventions. The purpose of this study was to examine the AOE of Black first-year college students and how these expectancies vary by gender, sexual orientation, sexual behavior, and previous alcohol use. Exploratory moderation analyses were conducted. Data was collected in 2017 from first-year students from four geographically diverse universities in the United States via an online baseline survey. In this analysis, students had to identify as Black, male or female, and a first-year student (N=307). The majority of the sample was heterosexual (92%), 18 years old (88.3%), and attended a predominately white institution (93.8%). Around one-quarter used alcohol in the last 30 days. Examining the AOE indicated that participants had low endorsement of positive outcomes of alcohol use such as tension reduction and sexual enhancement and higher endorsement of negative expectancies such as behavioral and cognitive impairment. There were significant moderation effects. Sexual minority males and females were more likely to endorse risk and sociability expectancies which had significant positive associations with alcohol use. Heterosexual women were significantly more likely to endorse cognitive and behavioral impairment expectancies which were significantly associated with never consuming alcohol. All women endorsed sexuality expectancies which were significantly associated with alcohol use. Addressing alcohol expectancies can help re-correct the misguided positive expectancies for alcohol use, reframe the negative expectancies as an opportunity to reduce alcohol use, and provide suggestions on alcohol-free activities that elicit similar positive expectancies. Mandating first-year college students to participate in alcohol interventions that include an intersectional framework (e.g. focusing on the intersection of race, gender, and sexual orientation) would be useful in supporting Black first-year college students overall health.

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ARE DRUG COURTS AN OPPORTUNITY TO INTERVENE IN THE WELL-BEING IN CHILDREN AND FAMILIES OF SUBSTANCE-USING PARENTS?

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More than 60% of people involved in the criminal justice system have a substance use disorder. Adult drug courts are effective community-based interventions for individuals with substance use disorder facing criminal charges; currently more than 3,400 adult drug courts provide services to 150,000 people annually. Individuals considered for and enrolled in drug courts often present with myriad needs that extend beyond substance misuse and criminal behavior. While drug courts must attend to these primary objectives, to maximize effectiveness, drug court programs must also consider treatments and services for needs that could interfere with successfully engaging in, and completing, treatment and supervision requirements.

Among adult drug court participants, it is estimated more than half are parents to at least one child under 18. Though we know justice-involved parents typically do not parent minor children alone, little is known about the family environment surrounding the drug court parent, their child, and other caregivers of that child. A parents' criminal justice involvement and substance use may create a suboptimal environment for children including trauma, poor mental health, and an increase in the risk for child maltreatment. Thus, given the negative effects parental substance use and criminal justice involvement may have on child well-being, we sought to examine characteristics of drug court parents that affect the well-being of their children and families, specifically parenting and mental health, and to compare these characteristics to the other caregiver.

In a cross-sectional sample of 100 drug court parents, we collected data on caregiver characteristics that may affect child and family wellbeing including the family environment, substance use and addiction severity, criminogenic risk and needs, parenting, adult mental health and child mental health. Statistical analyses were employed to differentiate parenting behaviors and mental health needs from drug court parents and other caregivers. As expected we found that the drug court parents were at moderate to high risk for recidivism and presented with multiple and significant criminogenic and psychosocial functioning needs. Risk for potential child maltreatment and poor parenting behaviors were elevated, and significantly higher compared to the other caregivers. DCP demonstrated clinically elevated mental health needs, and were significantly different across all indicators of mental health compared to other caregivers. Our findings confirm that there are additional needs of drug court clients that necessitate intervention. Adult drug courts may be a viable intervention point to address issues of parenting and mental health to improve the wellbeing of criminal justice-involved individuals, their children, and families.

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COMMUNITY VIOLENCE AND RISK FOR SUBSEQUENT SUBSTANCE USE IN ADOLESCENTS: ROLE OF SLEEP PROBLEMS

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Introduction: Exposure to community violence (ECV) can trigger a host of internalizing and externalizing symptoms in youth (Fowler et al., 2009). Specifically, witnessing or experiencing victimization within the community is associated with increased substance use (Sanders-Phillips & Kliever, 2019). What is less understood are the underlying mechanisms that might explain this association. Sleep problems have been linked to both ECV (Bagely et al., 2016) and substance use (Wong, Brower, Zucker, 2009) and may be a pathway to consider in the relation between ECV and substance use. The current longitudinal study examines how sleep problems in the context of ECV may affect subsequent substance use in youth.

Methods: Data for the study came from a sample (n=985) of middle school students collected during their participation in a randomized trial on the efficacy of an intervention designed to promote psychosocial adjustment among youth exposed to violence. A longitudinal mediation model tested the indirect effect of 9-month (T2) sleep problems on the relation between baseline (T1) ECV and 12-month (T3) substance use (alcohol, tobacco, and other drugs). The outcome did not differ by sex and inclusion in the model resulted in unacceptable fit, so it was excluded from the final model. The final model controlled for study condition, depressive symptoms, intrusive thoughts, and substance use at T1.

Results: The fit of this model was adequate, $\chi^2(3) = 17.73, p < .001$; CFI=0.951; RMSEA=.074 [90% CI=0.043, 0.110]; SRMR=0.031. There was a significant positive association between ECV at T1 and sleep problems at T2 ($b=0.284, p < .001, 90\% \text{ CI}=0.236, 0.333$), and a significant positive association between sleep problems on substance use at T3 ($b=.006, p < .01, 90\% \text{ CI}=.003, .009$). Depressive symptoms were positively associated with sleep problems. Substance use at T1 was positively associated with substance use at T3. The indirect effect of sleep as a mediator in the relation between community violence exposure and substance use at T3 was significant ($b=.002, p < .001, \text{ CI}=.001, .003$). The proposed direct and indirect relations between ECV and substance use accounted for 14.4% of the variance in substance use at T3.

Conclusions: Consistent with expectations, higher levels of ECV was significantly associated with subsequent poorer sleep which, in turn, was associated with subsequently more substance use among middle school students. The structural model showed that ECV was significantly associated with more substance use directly and indirectly through sleep problems. These longitudinal findings suggest that ECV can increase risk for substance use in youth and suggest that sleep problems may account for how ECV might influence substance use. Recognizing and addressing sleep problems in students may be an effective way to target children who need clinical intervention related to their exposure to violence.

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MEDICAID-INSURED CALLER CHARACTERISTICS AND QUIT OUTCOMES AT THE ARIZONA SMOKERS' HELPLINE

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Background: Despite historic reductions in tobacco use, disparities in use still exist. Racial and ethnic minority groups, gender and sexual minorities, low socioeconomic status individuals, those with a mental health condition, pregnant women, youth, and Medicaid enrollees have been identified as priority populations. Among these, Medicaid-insured tobacco users are a uniquely disparate group. In the last 15 years, the decline in smoking among Medicaid beneficiaries was one-third the national average. In some states, there has been no detectable reduction in smoking among enrollees. For tobacco cessation quitlines, it is important to identify whether insurance type represents a barrier to quitting that needs to be addressed in treatment.

Purpose: To examine whether insurance type is associated with quit status among tobacco users enrolled in a quitline service. We hypothesized that after controlling for factors known to be associated with quit outcomes, there would not be a difference in quit outcomes by insurance type.

Methods: We included clients who enrolled at the Arizona Smokers' Helpline (ASHLine) from Jan 2014 – Nov 2018 who had complete data for analysis (N=8,606). Data including insurance type, demographic characteristics, and history of tobacco use were collected at the time of intake. Tobacco quit status is self-reported, 30-day point prevalence measured 7-months post enrollment.

Results: Compared to all other clients, those with Medicaid (41%) were statistically more likely to be female, smoke in the home, and have a mental or chronic health condition. They were less likely to be educated, receive social support, or use cessation medication. Controlling for these and other theoretically relevant variables, the adjusted odds of quitting for Medicaid enrollees was 0.87 (95% CI: 0.79-0.96) when compared to clients not enrolled in Medicaid. We also found that clients with 7 or more coaching sessions were three times more likely to quit compared to those with 1 or 2 sessions (OR 3.25, 95% CI: 2.87-3.69).

Discussion: The association between Medicaid and tobacco cessation was significant, but less impactful than many other controlling factors. This suggests that insurance status alone represents a less meaningful barrier to quitting than other factors. Research has shown that despite making similar efforts in quitting, socioeconomically disadvantaged tobacco users are about half as likely to quit compared to high socioeconomic groups. Thus, the factors that contribute to initiating a quit attempt are different than those required for maintaining abstinence. Given its importance, additional coaching sessions might focus on assisting Medicaid-insured clients to connect with resources that address upstream determinants of health in general, and smoking behavior specifically.

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PREFERENCES FOR FINANCIAL INTERVENTIONS AMONG CURRENT SMOKERS

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Background: The prevalence of smoking is 4 times higher among people of low socioeconomic status. Although financial stress is a barrier to smoking cessation, current cessation approaches do not address financial concerns as a means of improving the likelihood of successful quitting. To identify financial interventions that would be engaging to smokers as a component of a smoking cessation program, we asked current smokers what interventions would be helpful and through what modalities they would prefer to receive them.

Methods: Current smokers (n=89) were recruited through Prolific Academic and completed a web-based survey as part of a broader study on financial health. The survey included the Financial Anxiety Scale (FAS) and a measure of financial well-being. Participants reported their past and current cigarette smoking and their preference for nine different financial interventions and three options regarding how to receive the interventions (in-person, phone, web/app).

Results: Mean FAS was 29.24 and mean financial well-being was 44.31, indicating moderate financial stress. A substantial majority of current smokers reported at least some interest in basic needs assistance (74%), medical bills assistance (78%), a database of financial services (80%), or information on specific financial services that apply to the participant's situation (83%). They were also interested in debt/loan repayment programs (67%), employment programs (52%) and help with financial anxiety (56%). Legal assistance (35%) and budget planning (38%) were of less interest. Regarding modality, they overwhelmingly wanted to receive financial services online or by mobile app rather than by phone or in person.

Conclusions: Current smokers were most interested in interventions that helped them identify direct financial aid. Reflecting the extent to which financial health impacts mental health, the majority also reported interest in receiving assistance to help with financial anxiety. There is high interest among current smokers in receiving financial interventions, particularly when delivered digitally. Including financial interventions in smoking cessation programs could help engage smokers and assist them by addressing poor financial health and its consequences as barriers to cessation.

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CO-USE OF CIGARETTES AND CANNABIS ON THE SAME OCCASION AMONG YOUNG ADULT SMOKERS

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Background: Cannabis is commonly used by young adult smokers. Prior research has predominantly described cigarettes and cannabis co-use as any use of both substances in the last 30 days using retrospective self-reports. Existing studies suggest that closer temporally related co-use (e.g., on the same occasion vs. on separate occasions) is associated with worse physical and mental functioning. Here, we examine co-use on the same occasion and identify factors associated with this co-use pattern.

Methods: A smartphone-based study collected 2891 consecutive daily assessments during 30 days among 147 young adult smokers (Mean age=22.7, 52% female) in the San Francisco Bay Area in 2016-2017. Daily reports on use of cigarette and/or cannabis were aggregated over the study period for each participant. Frequencies (i.e., number of days) of same-occasion co-use were computed for each participant. Multivariate linear regression examined the associations between frequency of same-occasion co-use with numbers of days using cigarettes, numbers of days using cannabis, and perceived general health, controlling for age, sex, race, and education.

Results: Overall, 92 participants (63%) reported any co-use of cigarettes and cannabis over the 30-day study period. Among these 30-day co-users, 98% (n=90) reported any co-use on the same day, and 85% (n=78) participants reported any co-use on the same occasion. Co-users with a greater number of same-occasion co-use episodes reported more days of smoking cigarettes ($\beta=0.54$, $p<0.01$) and using cannabis ($\beta=0.86$, $p<0.01$). A greater number of same-occasion co-use episodes was significantly associated with lower perceived general health in bivariate analysis ($\beta=-.03$, $p=0.04$), but this association was attenuated after controlling for demographics ($\beta=-.03$, $p=0.07$).

Conclusions: Given that same-occasion co-users more frequently used cigarettes and cannabis, interventions should address timeframes of co-use and tailor to different co-user profiles. Future research should measure co-use more accurately, such as on the same occasion, rather than in the last 30 days.

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CIGARETTE BRAND USE AND SEXUAL ORIENTATION: RESULTS FROM THE NATIONAL SURVEY ON DRUG USE AND HEALTH (NSDUH)

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Background: Gay, lesbian, and bisexual populations have a higher prevalence of cigarette smoking than heterosexuals, resulting in increased mortality from tobacco-related illness. There is extensive evidence that tobacco companies have targeted marketing towards these populations, which can influence tobacco-related perceptions and brand preference. The purpose of this study was to measure differences in cigarette brand use by sexual orientation.

Methods: Using the 2015-2017 cycles of the National Survey on Drug Use and Health (Sample N=24,310), we conducted survey weighted univariate and bivariate analyses of the most commonly-used cigarette brands (N=5) among adult smokers by sexual orientation. We then conducted survey weighted logistic regression analyses for each cigarette brand to test relationships between sexual orientation and brand use while controlling for sociodemographic characteristics.

Results: Adult smokers who identified as bisexual or gay/lesbian (vs. heterosexual) had higher odds of American Spirit (AOR=3.22, 2.86, respectively) and Camel cigarette use (AOR=1.78, 1.70, respectively). Identifying as gay/lesbian was associated with significantly increased odds of Marlboro use (AOR=1.23), while identifying as bisexual was associated with increased odds of Newport (menthol) use (AOR=1.71). Prevalence of American Spirit use was particularly pronounced in bisexual (17.6%) and gay (12.7%) men (vs. 5.71% heterosexual men), and Newport use was most prevalent among bisexual (29.3%) and gay/lesbian women (26.2%, vs. 21.4% heterosexual women).

Conclusions: Adult smokers who identify as bisexual or gay/lesbian may be more likely to prefer certain popular cigarette brands compared to heterosexuals. Specifically, identifying as bisexual or gay/lesbian was associated with approximately three times the odds of American Spirit use, and gay/lesbian and bisexual women also had elevated prevalence of Newport use. Health claims and other characteristics of these cigarette brands may influence risk perceptions and tobacco-related health outcomes in this population. Therefore, marketing and promotion practices of these brands must be examined to improve tobacco-related public education and targeted risk communication.

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ASSOCIATION OF NICOTINE HARM PERCEPTIONS AND SUBSEQUENT SMOKING ABSTINENCE AMONG SMOKERS WHO USED THE NICOTINE SALT POD SYSTEM

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Objective: Previous research has not found an independent association between nicotine and tobacco-related diseases, including cancer. Yet recent evidence suggests that misperceptions regarding the harmfulness of nicotine are widespread. There is little data on nicotine harm perceptions among smokers who use electronic nicotine delivery systems (ENDS), and it is unknown if nicotine harm perceptions are prospectively associated with future abstinence from cigarette smoking.

Methods: Adult past 30-day smokers (N=26,187) who recently purchased a nicotine salt pod system (NSPS; JUUL Labs, Inc.) were invited to participate in a behavioral study and completed baseline, 30-, 60-, 90-, 180- and 270-day follow-up assessments online. At baseline, participants completed two measures assessing nicotine harm perceptions ("How large a part of the health risks caused by cigarette smoking comes from the nicotine itself?" and, "How large a part of the cancer caused by cigarette smoking comes from the nicotine itself?") with 4-level response options ("A very large part or all of the health risks [VLP]," "A relatively large part [RLP]," "A relatively small part [RSP]," "None or a very small part [VSP]"). At each follow-up, participants reported if they had smoked combustible cigarettes in the past 30-days (yes/no). Repeated-measure logistic regressions adjusted for sociodemographic and smoking characteristics were used to assess associations of nicotine harm perceptions and subsequent smoking across follow-ups.

Results: 12.5% of smokers responded that VSP of the health risks caused by smoking comes from nicotine, 46.7% RSP, 28.4% RLP, and 12.4% VLP of the health risks. Similarly, 17.3% responded that VSP of the cancer risks caused by smoking comes from nicotine, 44.4% RSP, 24.7% RLP, and 13.5% VLP of the cancer risks. Compared to smokers who stated VSP of the health risks caused by smoking comes from the nicotine, those who stated a RSP (aOR[95% CI]=0.87[0.81, 0.92]) and RLP (aOR[95% CI]=0.92[0.86, 0.98]) had significantly reduced odds of abstaining from smoking across all follow-ups; odds were not significant for those who stated VLP of the health risks (aOR[95% CI]=1.03[0.96, 1.13]). Models of nicotine cancer risk perceptions and future smoking demonstrated a similar pattern of findings.

Conclusions: Among adult past 30-day smokers, misperceptions regarding the harm of nicotine were common. Beliefs that nicotine caused a relatively large part of the health risk of smoking (vs. none or a very small part) were prospectively associated with reduced odds of subsequent past 30-day abstinence from combustible cigarette smoking across a 9-month period. Accurately communicating the independent cancer and disease risk of nicotine is important for supporting smokers' efforts to switch away from combustible tobacco products.

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DISCRETIONARY SPENDING PRIORITIES AMONG JOB-SEEKING SMOKERS

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Significance: Tobacco use is costly for physical and financial wellbeing. Smoking is associated with unemployment and greater difficulty finding re-employment. The current study examined job-seeking smokers' prioritization of smoking over other basic life needs.

Methods: Data were collected at baseline in a clinical trial testing a smoking cessation intervention for job-seeking smokers. Participants (N=290) ranked items from 1 (highest priority) to 13 (lowest priority) for prioritization of their discretionary spending. The online survey randomly ordered presentation of the items.

Results: With a mean score of 4.7 (SD=3.1), cigarettes ranked #2 in importance behind only food (M=2.5, SD=2.7); 45% of the sample ranked tobacco in their top 3 spending priorities. Nicotine replacement therapy (NRT) was ranked the lowest. On average, job-seeking resources (e.g., cell phone, transportation, grooming, new clothing) were prioritized less than food and cigarettes, but higher than other items (e.g. medical treatment, alcohol). Those in precontemplation for quitting smoking were more likely to rank cigarettes in their top 3 (55%), compared to those in contemplation (37%) and preparation (44%), $X^2=2.69$, $df=2$, $p=.032$. Those who smoked within 30 minutes upon waking (50%) were more likely to rank cigarettes in their top 3, compared to those who smoked after 30 minutes (33%), $p<.05$. Smoking more cigarettes/day correlated with a greater prioritization of cigarettes ($r=-0.21$, $p<.01$) and lower prioritization of food ($r=0.16$, $p<.01$). Spending more on cigarettes also was associated with lower prioritization of food ($r=0.15$, $p<.05$). More past year quit attempts was significantly associated with less prioritization of cigarettes ($r=0.16$, $p<.01$). Non-Hispanic whites gave higher priority to cigarettes (M=4, SD=2.8) than did other racial/ethnic groups (M=5, SD=3.2, $F(1,289)=6.11$, $p=.014$). Prioritization of cigarettes did not differ by gender nor significantly correlate with age, education, income, or amount spent on cigarettes ($p's>.10$). The April 2017 California cigarette tax hike was not associated with prioritization of cigarettes or NRT ($p's>.300$). Cigarettes/day, stage of change, and time to first use upon waking were not significantly associated with prioritization of NRT.

Conclusions: Findings indicate cigarettes are highly prioritized, second only to food in discretionary spending, among job-seeking unemployed smokers. Cigarettes were prioritized over job-seeking and healthcare needs, particularly among more heavily addicted smokers. Helping job-seekers quit smoking would increase resources for job-seeking and other basic life needs.

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DIFFERENCES IN SMOKING PATTERNS AMONG PUERTO RICANS COMPARED TO OTHER LATINO SUBGROUPS

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Introduction: Puerto Ricans have the highest smoking prevalence rate and are less likely to quit when compared to other Latino sub-group in the U.S. Smoking prevalence varies between 19-35% for Puerto Ricans in the U.S. mainland vs. 13-17% in Puerto Rico (PR). Puerto Rican smokers are understudied and underserved with respect to access to smoking cessation treatment resources.

Objective: The objective of this study is 1) to compare smoking patterns of Puerto Ricans in the US with other Latino subgroups and 2) to compare smoking patterns of Puerto Ricans born in the US vs Puerto Rico.

Methods: Participants (N=279) were drawn from an ongoing smoking cessation trial for Latinos in the U.S. As part of the baseline survey we assessed smoking patterns (cigarettes per day (CPD), nicotine dependence, use of menthol cigarettes, use of pharmacotherapy to quit, e-cigarettes use, and past quit attempts), and country of origin. Participants represent 21 Latin American countries which were collapsed into two groups: Puerto Ricans and Non-Puerto Rican Latinos.

Results: A total of 19.4% of participants (n=54) self-identified as Puerto Ricans. Within the Puerto Rican sample, 42.6% (n=23) were born in Puerto Rico and 57.4% (n=31) were born in the U.S. When comparing Puerto Ricans vs non-Puerto Rican Latinos, Puerto Ricans were significantly less likely to have made a past quit attempt ($p=0.029$) and significantly more likely to smoke menthol cigarettes ($p<.001$). When comparing Puerto Ricans born in the U.S. and Puerto Rico, Puerto Ricans born in the U.S. had higher nicotine dependence (28.1% vs 17.4%), higher use of menthol cigarettes (84.4% vs 65.2%), and more past quit attempts (3.44 M vs 1.7 M) compared to Puerto Ricans born in the island, although these differences were not significant. There were no differences in CPD or in using e-cigarettes or pharmacotherapy in the past to quit smoking.

Conclusion: Consistent with prior research Puerto Ricans differed in their smoking patterns from other Latino smokers. They had strikingly lower rates of past quit attempts and higher use of menthol cigarettes compared to other Latino sub-groups. Although the sample size is small, results were similar when comparing Puerto Ricans born in the U.S. with those born in Puerto Rico. These differences suggest that targeted intervention efforts may be warranted for Puerto Rican smokers.

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ASSOCIATIONS OVER TIME OF CIGARETTE SMOKING, FOOD INSECURITY, AND PSYCHOLOGICAL DISTRESS

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Introduction: In the U.S., tobacco use is concentrated in disadvantaged and vulnerable populations, such as populations with lower income and with mental health needs. Food insecurity—a stressful condition due to problems in food access—is linked with psychological distress and is an independent risk factor for tobacco use. It is not well understood how these variables influence one another over time. We examined how tobacco use (cigarette smoking), food insecurity, and psychological distress operate as risk factors for one another in a 2-year longitudinal analysis.

Methods: We analyzed data from the 2015 and 2017 waves (T1 and T2, respectively) of the Panel Study of Income Dynamics, a nationally representative household survey. The sample included 7,946 heads of households who provided data in both T1 and T2 on current cigarette smoking status (yes/no), food insecurity (USDA Food Security Survey Module), and psychological distress (K6 Psychological Distress Scale). Reciprocal effects of smoking, food insecurity, and psychological distress were examined using cross-lagged panel analysis. In a saturated model, cross-lagged regression coefficients were estimated simultaneously with direct-effect paths from T1 to T2, controlling for age, sex, education, and poverty. Analyses were conducted in Mplus using survey weights, accounting for the complex survey design.

Results: Results showed significant bidirectional associations between smoking status and food insecurity. Cigarette use at T1 positively influenced food insecurity at T2; conversely, food insecurity at T1 positively influenced cigarette use at T2. Food insecurity and psychological distress also had significant, positive bidirectional associations. However, the association between cigarette use and psychological distress was unidirectional. Psychological distress at T1 influenced cigarette use at T2, but cigarette use at T1 did not influence psychological distress at T2. Rather, cigarette use and psychological distress were concurrently associated at T2 only.

Conclusions: The current findings show that smoking, food insecurity, and psychological distress operate as risk factors for one another, although the relationships were nuanced. There is a need to replicate with more timepoints, towards understanding the overlapping health and mental health burden of smoking, food insecurity, and psychological distress. These findings have treatment implications for working with vulnerable populations experiencing high burden of health disparities.

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ASSOCIATIONS BETWEEN E-CIGARETTE ABSOLUTE VERSUS RELATIVE HARM PERCEPTIONS AND INFORMATION SEEKING BEHAVIORS AMONG US ADULTS

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Background: The use of e-cigarettes (e-cigs), an innovative alternative tobacco product, has increased considerably in the US in recent years. Although vaping e-cigs is not without health risks, e-cigs have been framed in some contexts either as “not harmful” (an absolute judgment) or as “less harmful than combusted cigarettes” (a relative judgment). We assessed how absolute vs. relative harm perceptions of e-cigs were associated with e-cig information seeking in a sample of current cigarette smokers and non-smokers.

Method: We analyzed data on US adults 18 years or older from two cycles of the National Cancer Institute’s Health Information National Trends Survey (HINTS-FDA 2015, $N = 3,738$ and 2017, $N = 1,736$). We used weighted logistic regression models to explore associations between harm perceptions and information seeking behaviors (controlling for demographics and survey cycle).

Results: When information seeking behaviors were regressed separately on absolute and relative harm perceptions, higher absolute harm perceptions were significantly associated with lower odds of having looked up information on where to buy e-cigs ($aOR = 0.46$, $p = .01$) and on e-cigs cost ($aOR = 0.47$, $p = .01$). Higher relative harm perceptions were significantly associated with higher odds of having looked up information on e-cigs health effects ($aOR = 1.78$, $p = .04$); and lower odds of having looked up information on using e-cigs to quit/reduce smoking ($aOR = 0.64$, $p = .03$) and on e-cigs cost ($aOR = 0.59$, $p = .02$). When information seeking behaviors were regressed simultaneously on both harm perceptions, only relative harm perceptions continued to be significantly associated with having looked up information on using e-cigs to quit/reduce smoking ($aOR = 0.54$, $p = 0.01$). Additionally, current smokers vs. non-smokers had significantly higher odds of having looked up information on using e-cigs to quit/reduce smoking ($aOR = 2.75$, $p = .01$); and on how to get free e-cigs samples ($aOR = 4.89$, $p = 0.03$). Interactions between harm perceptions and smoking status were not significant.

Conclusion: Although e-cigs may pose unique harms to health, information seeking behaviors indicate that individuals may primarily consider e-cig risk as it compares with that of combusted cigarettes when seeking e-cig information, an approach that aligns with e-cig marketing strategies. Given the cross-sectional nature of the data, it is also possible that information seeking drives relative harm perceptions and replication with longitudinal data is necessary.

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DIETARY INTAKES AMONG HEAVY VS. LIGHT SMOKERS FROM THE ALPHA-TOCOPHEROL, BETA-CAROTENE CANCER PREVENTION STUDY COHORT

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Background: Smokers tend to have less adequate diet as compared to non-smokers. Less is known about dietary differences between light vs. heavy smokers. The purpose of this study was to evaluate dietary intake by the level of smoking.

Methods: We evaluated dietary intake among light vs. heavy smokers in Finnish male smokers, aged 50 - 69 years, in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study. Out of 27,111 participants, 17,300 (63.8%) reported smoking ≥ 20 cigarettes/day and were classified as heavy-smokers, and 9,811 (36.2%) reported smoking < 20 cigarettes/day and were classified as light-smokers.

Results: Baseline mean serum alpha-tocopherol (11.86 ± 0.03 vs. 12.13 ± 0.04 mg/l; $p < 0.00001$) and beta-carotene (201.90 ± 1.38 vs. 233.48 ± 1.93 ug/l; $p < 0.00001$) were significantly lower among heavy-smokers. Intakes of cereal (212.13 ± 0.67 vs. 221.78 ± 0.84 g/day; $p < 0.00001$), vegetables (110.91 ± 0.54 vs. 118.29 ± 0.71 g/day; $p < 0.00001$), fruits (209.91 ± 1.48 vs. 232.44 ± 1.98 g/day; $p < 0.00001$), and total dietary fiber (18.44 ± 19.29 g/day; $p < 0.00001$) were significantly lower among heavy-smokers as compared to light-smokers. However, intakes of red meat (73.14 ± 0.27 vs. 68.04 ± 0.32 g/day; $p < 0.00001$), processed meat (78.10 ± 0.47 vs. 69.44 ± 0.54 g/day; $p < 0.00001$), dairy products (737.23 ± 3.06 vs. 719.42 ± 3.74 g/day; $p < 0.00001$), coffee (640.56 ± 2.80 vs. 549.23 ± 3.13 g/day; $p < 0.00001$), and alcohol (20.55 ± 0.18 vs. 13.50 g/day; $p < 0.00001$) were significantly higher among heavy-smokers as compared to light-smokers.

Conclusions: Dietary intake vary significantly by the level of smoking and heavy-smokers have poorer intakes as compared to light-smokers. The observed dietary differences have important implications for cancer prevention and control efforts, suggesting a need to incorporate dietary components into tobacco cessation interventions.

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BEHAVIORAL CESSATION INTERVENTION MAY MITIGATE ADVERSE EFFECTS OF POOR SLEEP ON LONG-TERM ABSTINENCE IN LOW-INCOME SMOKERS

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Significance: Most treatment-seeking smokers relapse within a year of a quit attempt. Evidence suggests that inadequate sleep is a modifiable risk factor for treatment relapse. Using data from a randomized controlled trial, Kids Safe & Smoke-Free (KiSS; $n = 327$), we examined whether an evidence-based behavioral cessation intervention mitigated the effects of inadequate sleep on relapse at 12-month follow-up. The primary aim of KiSS was to address child tobacco smoke exposure in a sample of predominantly low-income, female, African American smokers. KiSS randomized parents to either a multilevel pediatric clinic intervention (Ask, Advise, Refer; AAR) combined with telephone counseling (AAR+Counseling) or the AAR intervention plus attention control (AAR+Control).

Methods: Data included 12-month, post-treatment bioverified 7-day point-prevalence smoking abstinence, self-reported sleep duration (average hours sleep per night in prior month), sleep medication use, and current depressive symptoms. Participants with missing abstinence data were coded as "not abstinent," and other missing data were imputed using multiple imputation. Logistic regression was used to predict bioverified quit from condition, sleep duration, and the condition x sleep interaction, controlling for depressive symptoms and sleep medication use.

Results: Independent of depressive symptoms and sleep medication use, there were significant effects of condition, sleep duration, and condition x sleep duration (all p 's $< .05$). The odds of being abstinent were higher in the AAR+Counseling condition than in the AAR+Control condition ($OR = 3.45$, $SE = .49$, $p = .01$), and smokers who slept more hours also had higher odds of being abstinent ($OR = 1.77$, $SE = .23$, $p = .01$). The condition x sleep interaction showed that among those in the AAR+Control group, more sleep hours were associated with higher odds of being quit, yet among those in the AAR+Counseling condition, there was no relation between sleep duration and abstinence.

Conclusions: Inadequate sleep appears to reduce the odds of quitting among smokers receiving minimal intervention but does not appear to be a risk factor among smokers receiving more intensive intervention.

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MINORITY STRESSORS AND POOR MENTAL HEALTH ARE ASSOCIATED WITH INCREASED RISK OF BINGE EATING BEHAVIORS IN SEXUAL MINORITY WOMEN

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Despite evidence suggesting that sexual minority women (SMW; e.g., lesbian, bisexual) have higher rates of binge eating behaviors than heterosexual women, factors that contribute to this disparity are still not well understood. It is theorized that minority stress – or the unique stressors associated with being a member of a stigmatized group – may contribute to health disparities and to higher rates of some unhealthy behaviors. Therefore, we used data from the Chicago Health and Life Experiences of Women (CHLEW) study to examine binge eating in a community sample of SMW. We tested the cross-sectional associations of minority stressors (stigma consciousness, perceived discrimination, and internalized homophobia) and symptoms of poor mental health (depressive and posttraumatic stress [PTSD]) on any/no reports of past-three-month overeating episodes and binge eating episodes (overeating with loss of control). We used multiple logistic regression adjusted for demographics and social support to investigate the association of minority stressors with binge eating behaviors. Logistic regression models examining the associations of mental health symptoms with binge eating behaviors also adjusted for minority stressors. The analytic sample included 662 SMW: mean age 39.8 years, 245 (37.0%) were White, 239 (36.1%) were Black, 156 (23.6%) were Latina and 22 (3.3%) were “other race”, and 610 (92.2%) had a high school education or greater. A total of 114 (17.9%) reported overeating and 60 (9.1%) reported binge eating in the past 3 months. After covariate adjustment, higher levels of stigma consciousness (adjusted odds ratio [AOR] 1.44, 95% CI = 1.15-1.79) and perceived discrimination (AOR 1.28, 95% CI = 1.10-1.50) were associated with higher odds of overeating. There was no significant association between internalized homophobia and overeating (AOR 1.02, 95% CI = 0.98-1.07). Minority stressors were not associated with binge eating. Higher levels of depressive (AOR 1.07, 95% CI = 1.02-1.12), but not PTSD (AOR 1.09, 95% CI = 0.99-1.20) symptoms, were associated with higher odds of overeating. However, both depressive (AOR 1.14, 95% CI = 1.08-1.21) and PTSD (AOR 1.17, 95% CI = 1.03-1.33) symptoms were associated with higher odds of binge eating. It appears that minority stressors may increase the likelihood of overeating, whereas mental health symptoms were associated with higher likelihood of binge eating. Given the association of binge eating behaviors with chronic conditions (e.g., obesity and cardiovascular disease), these findings suggest that interventions targeting both minority stressors and mental health symptoms are needed to reduce risk of binge eating behaviors among SMW.

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INTIMATE PARTNER VIOLENCE AND ITS RELATED FACTORS AMONG CHINESE IMMIGRANT WOMEN: AN ONLINE SURVEY STUDY

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Background: Intimate partner violence (IPV) is a serious social and health issue that affects women around the world. Extensive research on IPV has been conducted with Whites, African Americans, and Hispanic Americans. However, there are only a small body of IPV research on Asian immigrants, even less research has been conducted in the context of IPV specifically for Chinese immigrants. The purpose of the study is to investigate the prevalence of IPV and its multiple related factors among Chinese immigrant women.

Methods: This is a cross-sectional descriptive study using the online survey approach. A total of 475 Chinese immigrant women were recruited via Chinese social network sites. Past year IPV, sociodemographic, partners' sociodemographic, relationship-related, and immigration-related factors, religion, social support, acculturation, adverse childhood experiences (ACE), and gender role beliefs were measured. Binomial logistic regression models were conducted to test the relationships between multilevel factors and the occurrence of past year IPV, with those multilevel factors included as explanatory variables and past year IPV included as the response variable.

Results: We found approximately 21% of women experienced past year IPV, 19% had emotional violence, 4% had physical violence, and 3.2% had sexual violence. Relatively young age, cohabiting relationship, lower levels of relationship satisfaction, relatively old age of arrival, longer length of stay, ACE, and lower levels of social support were found in relation to increased risk of IPV among this sample of Chinese immigrant women recruited online.

Conclusion: The study added to our understanding of IPV among this ethnic group of women. Future research is still needed to explore abused Chinese immigrant women's perceptions of IPV, safety strategies, help-seeking behaviors, availability of personal and institutional resources, and special needs for services. Culturally-tailored IPV prevention and intervention programs specific to Chinese immigrant women are also needed.

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LESSONS LEARNED IN MODIFYING A HEALTH PROMOTION BEHAVIORAL CHANGE TOOL FOR MOTHERS WITH DISABILITIES

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Women with disabilities are a historically unrecognized health disparities group, who increasingly choose to have children. Maintaining healthy behaviors postpartum is challenging as infant care adds to existing demands, especially for mothers with physical disabilities (MPDs). However, self-report tools measuring health behaviors and behavior change are typically not designed with women with physical disabilities in mind. To understand key considerations in modifying such tools, we recruited mothers on a social media group dedicated to parents with disabilities, a listserv related to disabilities and through other personal contacts, and then interviewed them via teleconference using open-ended questions. Interview questions elicited feedback about an existing toolkit (health behavior assessment, profile of results, and behavior change decision aid) designed for nondisabled mothers. The (a) assessment covered 6 domains (diet, physical activity, smoking, alcohol use, body image, and depressive symptoms) and was followed by (b) a graphical profile of results. Finally, a (c) behavioral decision aid facilitated setting behavioral change goals. Interviewees were 11 MPDs (mean age 29; 9 white, 2 other races) who parented biological children up to age 3. Their physical disabilities included spinal cord injury, spinal bifida, amputation, and neuromuscular and other disorders. Audio-recorded interviews were transcribed and analyzed by quantitative and qualitative content analysis. Two researchers independently coded the interviews and then compared themes. Most mothers rated the 3 toolkit components as very or moderately easy to understand and very or moderately useful. Still, themes emerged on how to adapt this toolkit as well as other self-report tools when used with MPDs. These include: Use non-judgmental language and tone in assessments because MPDs face frequent comparisons with nondisabled ideals for behavior and parenting; be aware that body image (and challenges of body acceptance) may have different meanings to MPDs; ensure that exercise items contain examples applicable to MPDs (e.g., wheeling or swimming); include strengths and supports not just risks; consider motivation in design of behavior change tools; allow women choice in setting goals for change; use alternate formats (paper or electronic) as different ones may work for different MPDs; include methods for accessing social support especially from others MPDs; and identify resources for adaptive parenting tools. An overarching conclusion is that needs and preferences vary among MPDs because they have differing strengths and abilities, so flexibility is needed in modifying self-report tools. However, MPDs repeatedly stressed the importance of considering their specific needs because they are so often neglected in services and research.

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6:15 PM-7:30 PM

THE ASSOCIATION BETWEEN SELF-CARE BEHAVIOR AND WELL-BEING IN MOTHERS OF TODDLERS

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The vulnerability of postpartum women to emotional, physical, and psychological distress is a well-developed area of research, but the role of self-care is less understood. It is important to examine mothers' inability to engage in self-care behavior because recent research highlights its effect on mental health (Elliott, Powell, & Brenton, 2015; Gunderson & Barrett, 2015; Rizzo et al., 2012). The current pilot study adapted a detailed self-care measure that was developed for a different population, the Self-Care Assessment Worksheet (SCAW; Saakvitne & Pearlman, 1996), to examine the association between self-care behaviors and well-being of mothers. We administered an online survey to 65 mothers of toddlers born in 2017 to investigate specific categories of behaviors they engage in to take care of themselves. The SCAW is comprised of physical, psychological, emotional, spiritual, workplace/professional, and balance self-care subscales. Interestingly, out of the six self-care subscales, the most consistent associations were found for the physical, emotional, and work self-care domains. Reports of engaging in more of these types of self-care were associated with lower levels of depression, anxiety, and stress, as well as higher levels of self-efficacy and perceived emotional and instrumental support. In contrast, the dimensions of spiritual, psychological, and balance were less consistently correlated with psychosocial well-being. In addition, anecdotal feedback about the measure from our participants suggests that the SCAW may have some treatment benefits worth investigating in the future. Participants expressed that the measure gave them insight into the various ways they were taking care of themselves and where there was room for improvement. Thus, these preliminary results highlight that the SCAW appears to be a useful instrument to measure specific self-care behaviors in a sample of new mothers, and many of the expected links with well-being were found. Of course, because this is a cross-sectional design, it is not possible to determine whether self-care contributes to well-being, having superior psychological and social resources makes self-care possible, or if the associations are truly bidirectional. Longitudinal studies will be especially valuable to help establish directionality as well as the potential for change over time. Future studies could further examine the potential clinical utility of the SCAW to guide treatment with mothers.

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A348

6:15 PM-7:30 PM

EFFECT OF INTIMATE PARTNER VIOLENCE EXPOSURE ON HIV VIRAL LOADS IN A PERINATAL COHORT IN SOUTH AFRICA

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Introduction: While antiretroviral therapy (ART) in pregnancy can ensure infant and maternal health, ART adherence postpartum is often poor. One-third of HIV-positive women who achieved viral control during pregnancy virally rebound in the first year after giving birth. Intimate partner violence (IPV) worsens ART adherence and viral suppression among non-pregnant women in cross-sectional studies. However, less is known about how IPV alters viral response longitudinally or around the time of pregnancy.

Methods: We conducted secondary analysis of a prospective cohort of women in a public sector antenatal clinic in Gugulethu, a township near Cape Town, South Africa. Viral loads assessed at each of ten clinic visits (Abbott RealTime HIV-1) indicated viral suppression (< 50 copies/mL) and were assessed continuously as log copies/mL. IPV was measured at three time points using behaviorally-specific items on physical, sexual, and psychological violence (WHO instrument). Covariates were maternal age, gestation at enrolment, socio-economic status, timing of HIV diagnosis and ART initiation, relationship status, depressive symptoms (Edinburgh Postnatal Depression Scale), and alcohol use (AUDIT). We used dynamic panel modeling to estimate the longitudinal impact of IPV on viral loads.

Results: Of 471 women followed for a median of 23 months, a majority (84%) achieved viral suppression by 6 weeks postpartum, but only two-thirds (62%) were virally suppressed by 18 months postpartum. Nearly one in three women (29%) reported some form of IPV in pregnancy or during the study period. IPV victimization at any time point was associated with 64% reduced odds of achieving viral suppression 12 months postpartum (aOR=0.36, 95%CI 0.22-0.60). In longitudinal models, lagged IPV exposure was associated with higher viral loads after controlling for fixed effects, past viral control, and duration on ART. Model fit was improved by adding depressive symptoms and alcohol use, as these partially mediate the effect of IPV on viral suppression. In the final model, each standardized increase in IPV was associated with higher viral loads (coef=0.09, 95%CI 0.02-0.17). The effect of IPV was greater in magnitude than depressive symptoms (coef=0.05, 95%CI -0.03-0.12) or alcohol (coef=0.05, 95%CI -0.01-0.11). Model fit was acceptable (RMSEA=0.058, CFI=0.930).

Discussion: These findings from a perinatal South African cohort suggest exposure to IPV leads to higher viral loads postpartum. Compared with other comorbidities commonly addressed in the health setting (depression, alcohol use), IPV demonstrates a robust association with later viremia. Perinatal programs to address IPV may have positive outcomes for HIV-related health, and will be crucial for ensuring wellbeing of mothers and infants.

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DISCONTINUING CANNABIS USE DURING PREGNANCY: AN EXPLORATORY STUDY OF WOMEN'S MOTIVATIONS AND EXPERIENCES

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Background: A growing proportion of US women smoke marijuana during pregnancy, with epidemiologic data suggesting rates of use increasing 62% between 2002 and 2014. Recent changes in legalization may lead to greater access to cannabis, as well as a perception of lower prenatal risk. Although rising rates of prenatal use have been documented, little is known regarding why women use cannabis during pregnancy, as well as what motivates them to quit, and what the process of prenatal discontinuation is like. Documenting the experience of pregnant women who are attempting to discontinue cannabis use will be a useful first step in the development of new interventions and services.

Methods: In this exploratory study pregnant women were screened for cannabis use prior to and during pregnancy, and asked about reasons for using or discontinuing cannabis during the current pregnancy. Participants who reported discontinuation of cannabis during pregnancy were invited to take part in an interview regarding motivations for discontinuation, their process of quitting including barriers and facilitators, and emotional and physical symptoms. Participants included pregnant women seeking enrollment in two randomized clinical trials testing prenatal wellness interventions.

Results: To date, 1031 pregnant women were screened for cannabis use, and 230 of these women reporting used cannabis in the 6 months immediately before the pregnancy. We conducted a structured interview with 14 women who reported prenatal cannabis discontinuation and found that concerns about fetal exposure were highly salient. Many women voiced concerns about lack of support in the process of quitting, as well as difficulties accessing accurate information about the impact of prenatal cannabis use. Prenatal physical symptoms added challenges for some women during the process of quitting. Other specific barriers and facilitators to discontinuation were identified.

Conclusion: These findings provide an initial picture regarding motivations for discontinuing use of cannabis prenatally, and what the process is like for women who are trying to quit during the perinatal period. Many women reported insufficient supports in their process of quitting. Further research is needed to more fully elucidate motives for discontinuation and intervention approaches to support women who are interested in quitting during and after pregnancy.

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Thursday April 2nd, 2020 8:00 AM-9:15 AM

Symposium 1 8:00 AM-9:15 AM

PRESIDENTIAL SYMPOSIUM: FROM IDEAS TO INTERVENTIONS: A REVIEW OF FRAMEWORKS FOR DESIGNING AND OPTIMIZING HEALTH-RELATED BEHAVIORAL INTERVENTIONS

Susan M. Czajkowski, Ph.D.¹, Kate Guastaferro, PhD, MPH², Tianchen Qian, PhD, Bonnie Spring, PhD³

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Behavioral risk factors (e.g., tobacco use, adverse diet, sedentary lifestyles, overweight and obesity) are major contributors to chronic diseases such as cancer, cardiovascular disease, and diabetes. Designing more effective interventions for these risk factors is critical to accelerating the impact of behavioral medicine on disease incidence, progression and recovery. While there exist a number of frameworks and process models aimed at promoting the careful, systematic design and optimization of behavioral interventions, little guidance is available to compare key aspects of these models, understand their common and unique features, and aid in selecting the best approach for a specific research question. In this symposium, several approaches to designing and optimizing interventions for behavioral risk factors will be reviewed to promote greater knowledge of each individual framework, advance our understanding of commonalities and synergies between the frameworks, and allow for an informed choice on the part of investigators interested in developing and testing health-related behavioral interventions. The panel will include three speakers. The first speaker will discuss the Science of Behavior Change (SOBC) experimental medicine approach and the Obesity-Related Behavioral Intervention Trials (ORBIT) model for developing treatments for chronic diseases. The second speaker will then describe the Multiphase Optimization Strategy (MOST), and the third speaker will discuss an experimental design for informing the design of just-in-time adaptive interventions: Micro-Randomized Trials (MRTs). Finally, the discussant will identify commonalities and synergies among these frameworks as well as key differences that can help researchers choose which approach most benefits their research goals.

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1 8:00 AM-9:15 AM

DEVELOPING BETTER BEHAVIORAL INTERVENTIONS USING THE SOBC EXPERIMENTAL MEDICINE APPROACH AND ORBIT MODEL

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The ability to translate basic behavioral and social science discoveries into effective health-related behavioral interventions is essential for accelerating our science and increasing the impact of behavioral medicine research. As with the translation of biomedical discoveries into efficacious preventive and therapeutic interventions, identifying and assessing the mechanisms or “drivers” of behavior and using a well-defined framework to guide the process of designing and testing interventions can encourage the development of well-characterized, precisely targeted & optimized behavioral treatments, improving the likelihood they will have more robust and sustainable effects on the ultimate health outcomes of interest. In this talk, two approaches or frameworks used for developing health-related behavioral interventions – the Science of Behavior Change (SOBC) experimental medicine approach and the Obesity-Related Behavioral Intervention Trials (ORBIT) model – will be described. The key features of each of these frameworks will be discussed, with commonalities as well as differences emphasized to enable the audience to understand how and when each approach is best used, and how the approaches can be combined within a program of research designed to produce effective and sustainable health-related behavioral interventions.

2 8:00 AM-9:15 AM

A BRIEF OVERVIEW OF THE MULTIPHASE OPTIMIZATION STRATEGY: OPPORTUNITIES FOR INTERVENTION SCIENCE

Kate Guastaferro, PhD, MPH¹

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Traditionally the evaluation of a behavioral intervention utilizes a two-arm randomized controlled trial. While the RCT is able to demonstrate effectiveness, the design leaves important questions regarding efficacy, economy, and scalability unanswered and thereby potentially hindering the public health impact of an intervention.

This presentation will provide a brief overview of an innovative methodological framework for optimizing behavioral interventions, the multiphase optimization strategy (MOST). Inspired by principles of engineering, interventions developed using MOST are designed to produce the best expected outcome obtainable given key constraints, a process called optimization. MOST can be used to develop, refine, or adapt interventions to make them more efficient, effective, economical, and/or scalable. The presentation will give a brief overview of the three phases of MOST (preparation, optimization, and evaluation); highlight diverse applied examples to demonstrate the utility of MOST across a number of public health priorities; and describe potential to improve the impact on public health.

3 8:00 AM-9:15 AM

OPTIMIZING BEHAVIORAL MOBILE HEALTH INTERVENTIONS: THE ROLE OF MICRO-RANDOMIZED TRIALS

Susan Murphy, Ph.D.¹

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Mobile devices along with wearable sensors facilitate our ability to deliver supportive behavioral interventions to individuals anytime and anywhere. These interventions are being developed and employed across a variety of health fields, including to improve medication adherence, encourage physical activity and healthier eating as well as to support recovery in addictions. Most mobile health interventions involve notifications such as reminders or suggestions or supportive messages, delivered as an individual goes about their everyday life. Yet repeated notifications can lead to disengagement. To reduce disengagement, it is critical to only deliver notifications when they are most likely to be effective. Thus critical questions in the optimization of these mobile health intervention components include not only, “Are the notifications useful?” but also “Does the individual’s current context such as location, time, mood impact the usefulness of the mobile health notification?” These questions concern the optimization of the mobile health intervention. In this talk we discuss the micro-randomized trial design for use in optimizing mobile health interventions. We illustrate the ideas with the micro-randomized trials across a variety of fields.

Symposium 2

8:00 AM-9:15 AM

UNDERSTANDING, PLANNING, AND EVALUATING IMPLEMENTATION STRATEGIES FOR SCHOOL-BASED PHYSICAL ACTIVITY APPROACHES

Jacob Szeszulski, PhD¹, Paul Estabrooks, PhD², Maria E. Fernandez, PhD³, Rebecca E. Lee, PhD⁴, Timothy Walker, PhD¹¹University of Texas Health Science Center at Houston, Houston, TX; ²University of Nebraska Medical Center, Omaha, NE; ³University of Texas Health Science Center, Houston, TX; ⁴Arizona State University, Phoenix, AZ

Introduction: Children spend a large portion of their days in school, which provide physical activity opportunities that lead to positive health benefits. Despite their positive impact, school staff often face barriers when implementing physical activity approaches in schools (e.g., competing academic priorities, implementation by multiple stakeholders, stringent resource constraints), which can decrease their effectiveness. Therefore, there is an important need to understand the current implementation strategies being used in schools and ways to develop and evaluate them. In this symposium, we provide examples of how implementation science methods can be used for understanding, planning, and evaluating implementation strategies, within the context of school-based physical activity approaches.

Studies: The first study will discuss how a qualitative approach was used in a Houston, Texas school district to identify implementation strategies that schools already use to administer physical activity programs. The second study will describe how the Implementation Mapping process can aid in the identification or development of implementation strategies, based on theory, evidence, and new data. The third study will describe the process for evaluating implementation strategies used in the delivery of an early care and education center-based physical activity program, which is currently underway in Phoenix, Arizona. Taken together these three studies will serve as diverse examples of comprehensive and important processes for understanding, planning and evaluating implementation strategies in school-based physical activity research.

Discussion: Discussion from this symposium will focus on how different strategies can be applied across the research continuum (i.e., development, planning, and assessment), and how different research questions may warrant the use of different methodological approaches. In addition, this symposium discusses implementation strategies commonly used in the delivery of school-based physical activity research, and discusses how researchers and practitioners can use various implementation strategies to improve the effectiveness of approaches. Finally, this symposium will highlight multiple implementation science processes and provide context for choosing and applying these processes based on the specific implementation challenge. Overall, this symposium will provide researchers and practitioners some insight in how to use of implementation strategies and provide guidance on how implementation science is critical for improving the delivery process of school-based physical activity approaches.

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8:00 AM-9:15 AM

IMPLEMENTATION MAPPING: A PROCESS FOR IMPROVING THE DELIVERY OF SCHOOL-BASED PHYSICAL ACTIVITY PROGRAMS

Maria E. Fernandez, PhD¹, Jacob Szeszulski, PhD², Timothy Walker, PhD², Gil ten Hoor, PhD³, Christine M. Markham, PhD⁴¹University of Texas Health Science Center, Houston, TX; ²University of Texas Health Science Center at Houston, Houston, TX; ³Maastricht University; ⁴University of Texas Health Science Center at Houston

Background: Inefficient implementation processes can weaken the impact of school-based physical activity programs, leading to poor reach, effectiveness, and maintenance. Implementation Mapping, a systematic, theory-driven process for planning implementation strategies can improve the delivery of physical activity approaches. Implementation Mapping is a part of the broader Intervention Mapping protocol for planning, implementing and evaluating health promotion programs that is used worldwide (>1000 publications). This abstract provides an example of how users applied Implementation Mapping for the “Focus on Strength” program that used strength exercises to help overweight children build self-efficacy.

Methods: Implementation Mapping uses the Intervention Mapping protocol and theory/frameworks from the field of implementation science to inform strategy selection and/or development. In step one, users conducted an implementation needs assessment to identify “Focus on Strength” program adopters (e.g., principals) and implementers (e.g. teachers). In step two, users created implementation outcomes (e.g., physical education teachers include strength exercises 3x per week for 15 minutes per class) and performance objectives (implementation sub-behaviors) to reach those implementation outcomes (e.g., teachers reflect on implementation of strength exercises). In addition, users identified determinants of implementation behavior, which were found in the literature, theoretical models, or school specific (e.g., lack of time). Finally, in step two, users crossed determinants with performance objectives to create matrices of change objectives that articulated what needed to change in a determinant of implementation behavior to enable the implementation action (e.g., teachers schedule time weekly to implement the program). In step three, users chose theoretical methods (e.g., participatory problem solving), that guided the selection or design of strategies (e.g., workshops). In step four, users produced implementation protocols and products (e.g., training manual) to improve the delivery process and contextual factors influencing implementation. Finally, in step five, users evaluated the program’s success in reaching implementation goals (e.g., implementation of strength exercises), performance and change objectives, and influencing determinants.

Discussion: Implementation is important to the delivery of school-based health promotion programs, yet implementation strategies are rarely applied systematically. Implementation Mapping, an evidenced-based, theory driven approach to develop/select implementation strategies, protocols and materials can accelerate and improve the delivery of school based physical activity interventions and allow users to tailor program delivery to the specific needs of their school’s setting.

2

8:00 AM-9:15 AM

SUSTAINABILITY VIA ACTIVE GARDEN EDUCATION (SAGE): IMPLEMENTATION STRATEGIES IN EARLY CARE AND EDUCATION CENTERS

Rebecca E. Lee, PhD¹, Jacob Szeszulski, PhD², Elizabeth Lorenzo, BSN¹, Jennie Hill, PhD³, Teresia O'Connor, MD⁴, Meg Bruening, PhD¹, Gabriel Shaibi, PhD⁵, Michael Todd, PhD¹, Paul Estabrooks, PhD³

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Introduction: Strategies that enhance adoption, implementation, and/or sustainability of school-based programs to improve health are critical. Sustainability via Active Garden Education (SAGE) is a garden-based program to improve preschool-aged children's physical activity and nutrition in early care and education centers (ECEC). SAGE uses multiple implementation strategies including teacher trainings, training others for leadership roles, creating program champions, and building community coalitions to improve delivery and sustainability processes. Here we describe the evaluation of SAGE's implementation strategies and preliminary results.

Methods: SAGE uses a "see one, do one, teach one," approach to implement semi-weekly 1-hour SAGE sessions in ECEC ($N=15$), develop ECEC staff for leadership roles, and identify program champions via a 1 initial teacher training, 11 train-the-trainer sessions (6 weeks), 1 booster training, and 12 ad hoc support sessions (6 weeks). Teachers completed surveys at pre-training, after the booster and post-training to assess implementation self-efficacy (5 items) and behaviors (20 items). ECEC directors completed a sustainability needs assessment (SNA) near the end of training. A SAGE community advisory board (CAB) completed the Wilder Collaboration Inventory.

Preliminary Results: Teachers had high levels of self-efficacy at pre-training, which peaked at the booster training and returned to baseline at post-training. Self-efficacy was higher for garden maintenance and taste testing activities, and lower for other curriculum elements (games, songs, discussions) and parent engagement. Teachers reported that booster training improved their abilities to manage the room during SAGE programming and to model appropriate behaviors for their class. SNA results showed that SAGE scored moderately (3.8 of 5) on training others for leadership roles and creating program champions. The CAB reported having strong purpose (4.4 of 5), but felt there were fewer resources (3.6 of 5) available to complete that Purpose.

Discussion: Implementation self-efficacy was sensitive to hands-on implementation experience. Engaging implementers in immersive and multi-sensory tasks (e.g., garden, taste tests) may enhance determinants of program delivery (i.e., self-efficacy). Programs like SAGE that enhance leadership roles and foster program champions could increase the potential for sustainable improvements in ECEC health programming in under-resourced areas.

3

8:00 AM-9:15 AM

IMPLEMENTATION STRATEGIES USED TO SUPPORT PHYSICAL ACTIVITY APPROACHES IN ELEMENTARY SCHOOLS: A QUALITATIVE STUDY

Timothy Walker, PhD¹, Jacob Szeszulski, PhD¹, Michael Robertson, Doctoral Student², Paula Cuccaro, PhD³, Maria E. Fernandez, PhD⁴

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Background: Various school-based approaches can improve children's physical activity before, during, and after school. However, the implementation of these approaches remains a challenge. Few studies have used qualitative methods to examine implementation strategies to support the delivery of physical activity approaches in schools. The purpose of this study is to gain a better understanding of these implementation strategies from stakeholders' perspectives.

Methods: We conducted individual interviews with elementary school staff from a mid-sized school district in Texas. Interviews lasted approximately 60 minutes and were audio recorded and transcribed for analyses. We used directed content analysis and an iterative categorization approach to systematically code and analyze the qualitative data. We identified emerging themes related to implementation strategies.

Results: We interviewed a total of 15 participants (4 classroom teachers, 4 physical education teachers, 3 assistant principals, and 4 principals). Participants discussed numerous implementation strategies supporting adoption, implementation, and maintenance of school-based physical activity approaches (e.g. before and after-school programs, classroom-based activity approaches, structured recess programs). Schools were commonly using a combination of discrete implementation strategies to support the delivery of physical activity approaches. Two of the most prominent strategies were training and program champions. Schools supported offsite and onsite training opportunities to help educate and motivate staff about specific physical activity approaches. Onsite trainings were held at the start of, and sometimes throughout, implementation. Participants frequently emphasized the important role that program champions play and the advantages of having a group of passionate individuals to drive the use of school-based physical activity approaches. Program champions often had many different responsibilities, including obtaining materials, helping train and motivate staff, checking/replacing equipment, and monitoring progress. Other commonly cited strategies included strategic scheduling, small-scale testing, and monitoring.

Discussion: Recent research efforts have set out to gain a better understanding of school-based implementation strategies. Findings from this study complement these efforts by contributing to a better understanding of implementation strategies specific to school-based physical activity approaches and including stakeholders' perspectives. In addition, results highlight potential mechanisms through which commonly used strategies operate to improve implementation. This information can be used to optimize future efforts centered on developing and testing implementation strategies for physical activity promotion in schools.

Symposium 3

8:00 AM-9:15 AM

NOVEL SLEEP AND CIRCADIAN HEALTH INTERVENTIONS FOR CANCER PATIENTS/SURVIVORS: WHERE DO WE GO FROM HERE?

Eric S. Zhou, PhD¹, William H. Redd, PhD², Rina S. Fox, PhD, MPH³, Qian Lu, MD, PhD⁴, Brian D. Gonzalez, PhD⁵¹Harvard Medical School, Boston, MA; ²Icahn School of Medicine, New York, NY; ³Northwestern University Feinberg School of Medicine, Chicago, IL; ⁴MD Anderson Cancer Center, Houston, TX; ⁵Moffitt Cancer Center, Tampa, FL

Background: Sleep and circadian health are becoming increasingly recognized as critical elements impacting a cancer patient's/survivor's disease-specific and overall health and well-being. Despite the prevalence of sleep/circadian disruptions in this population, there are few interventions tailored to their unique medical and psychosocial needs. Finding ways in which we can effectively manage the burden of disrupted sleep/circadian function using intervention strategies adapted to their needs is essential to patient engagement and integration into routine clinical care.

Method: This symposium presents the work of four investigators who developed novel sleep/circadian health interventions for cancer patients/survivors and evaluated their efficacy. The interventions are characterized by important elements that improve the likelihood of future integration into oncology care: (1) use of portable consumer technology; (2) fully automated web-based delivery; and (3) a culturally sensitive program.

Results: As described in the individual abstracts, the novel interventions were delivered in a range of cancer patient/survivor populations (e.g., adolescents/young adults, ovarian/endometrial survivors, an ethnic minority group). They evaluated light exposure therapy for disrupted circadian rhythms, a tailored online intervention for insomnia, and an expressive writing intervention. Each of these programs helped to ameliorate a range of symptoms including sleep disruption, psychological distress, and impaired quality-of-life.

Conclusions: These novel interventions are suited to meeting the sleep/circadian health needs of cancer patients/survivors as they were all tailored to some aspect of their distinctive cancer experience. All of the programs were designed in a way to reduce the demand on healthcare systems, requiring fewer financial and/or staff resources, which can help to increase the likelihood of adoption in clinical practice. Future research should determine how such programming can be disseminated in more cancer centers across the country.

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1

8:00 AM-9:15 AM

AN ONLINE INSOMNIA INTERVENTION TAILORED FOR ADOLESCENT AND YOUNG ADULT CANCER SURVIVORS IMPROVES SLEEP AND QUALITY OF LIFE

Eric S. Zhou, PhD¹, Elizabeth Fine, BS², Christopher Recklitis, Ph.D, MPH³¹Harvard Medical School, Boston, MA; ²Dana-Farber Cancer Institute; ³Dana-Farber Cancer Institute, Boston, MA

Background: Cognitive-behavioral therapy for insomnia (CBT-I) is highly effective and considered the gold standard treatment. Unfortunately, cancer survivors are unlikely to receive CBT-I, even in centers delivering specialized cancer survivorship care due to a lack of qualified providers. One way in which this major treatment barrier has been addressed has been through the use of online insomnia programs, including SHUTi (Sleep Healthy Using the Internet). However, SHUTi was designed for healthy adults, with limited content relevant to the specific developmental, psychosocial, and medical challenges experienced by adolescent and young adult (AYA) cancer survivors.

Methods: 17 AYA survivors (mean age=19.8 years; range=14-25 years) with insomnia enrolled in a 6-module, automated CBT-I program that was tailored to their unique sleep-impairing issues (e.g., delayed sleep phase, cancer-related fatigue). They were blood cancer (52.9%) and solid tumor (47.1%) survivors an average of 9.3 years post-diagnosis. Participants completed assessments at Baseline, and at 8- and 16-weeks post-intervention. We assessed insomnia severity (Insomnia Severity Index; ISI) and quality of life (PedsQL Physical Health and Psychosocial Health summary scores).

Results: Thirteen participants (76%) completed their 8-week follow-up and 11 (65%) completed 16-week follow-up. Significant, and positive, pre/post-intervention changes were reported at both follow-up timepoints in insomnia severity (Baseline=15.0; 8-week=11.1; 16-week=6.8), Physical Health (Baseline=67.8; 8-week=71.9; 16-week=75.6), and Psychosocial Health (Baseline=61.2; 8-week=66.8; 16-week=68.0). The majority (82%) of participants did not complete all 6 CBT-I modules, with a mean completion rate of 3.2 modules.

Conclusions: A novel online insomnia intervention is efficacious at treating AYA cancer survivors' insomnia and has the secondary benefit of improving quality of life. This has important implications for access to evidence-based clinical care for this growing population. However, it is worth noting that despite the significant improvements experienced by participants, most AYA cancer survivors failed to complete the entire program. Further research must explore ways to better engage the AYA population in insomnia treatments.

2

8:00 AM-9:15 AM

LIGHTING INTERVENTION FOR CANCER-RELATED SLEEP PROBLEMS

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Background: Cancer-related fatigue, depression, and sleep disturbance typically develop early in the disease course and treatment. 23 to 44% of survivors suffer from these sequelae up to 5 years post-treatment. The hypothesized mechanism is disruption of the Circadian Rhythm (CR) (i.e., disruption in 24-hour cycles of hormone secretion, body temperature, and sleep-wake activity cycles which respond to environmental cues, such as light and darkness). CR disruption is evidenced by impaired sleep-wake phases, flat diurnal cortisol rhythms, and lower evening melatonin. Such CR disruption has even been shown to affect survival. Our research investigates how light can be used to promote circadian entrainment (i.e., synchronization) to alleviate suffering. In the absence of external cues, the circadian system runs with a period length slightly greater than 24 hours. Morning light, especially daylight, is the most effective synchronizer of the circadian system to local time. The circadian system is maximally sensitive to short-wavelength blue light (i.e., circadian-effective light, CEL).

Methods: We deliver CEL to cancer patients in the morning for a minimum of 30 minutes in order to entrain their circadian system and alleviate aforementioned cancer-related sequelae. We have used two light delivery procedures: systematic light exposure (sLE) in which CEL is projected directly to the eyes from small portable light glasses. The other is programmed environmental illumination (PEI), which provides indirect, circadian-effective illumination of the entire hospital room. Both procedures are comparable in CR synchronization, but differ in ease of delivery and cost. PEI places no demands on the patient as the light is received passively; whereas sLE – the less expensive and portable light source – requires patient involvement (i.e., patients must wear the glasses).

Results: Repeated-measures linear mixed models indicated a statistically significant time × treatment group interaction effect with sleep efficiency improving more with CEL over time compared with circadian ineffective light ($F_{3,42} = 5.55$; $P = .003$) with a large effect size (partial $\eta^2 = 0.28$). By the end of the intervention and 3 weeks post-intervention, medium to large effects were seen for sleep efficiency with CEL. Medium to large effect sizes were also seen in sleep quality, total sleep time, and wake after sleep onset for participants with CEL. Indeed, data analysis revealed significant improvements in sleep efficiency for patients receiving CEL with their sleep efficiency being within the clinically normal range at the end of intervention and at follow-up.

Conclusions: Light delivery interventions with cancer patients are noninvasive and cost-effective. These interventions also yield positive improvements in cancer-related fatigue and depression.

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8:00 AM-9:15 AM

FEASIBILITY AND PRELIMINARY EFFICACY OF SYSTEMATIC BRIGHT LIGHT EXPOSURE AMONG GYNECOLOGIC CANCER SURVIVORS

Rina S. Fox, PhD, MPH¹, Heather McGinty, PhD², Sofia Garcia, PhD³, Kathryn Reid, PhD⁴, Katrin Bovbjerg, BA⁵, Precilla Fajardo, BA⁵, Lisa Wu, PhD¹, Shohreh Shahabi, MD⁵, Jason Ong, PhD⁵, Phyllis Zee, MD, PhD⁴, Frank Penedo, PhD⁶

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Background: Cancer-related sleep disturbance is highly prevalent and adversely impacts physical and emotional well-being. Emerging evidence shows that bright light exposure can improve sleep disturbance by enhancing circadian regulation. This pilot study assessed the feasibility and preliminary efficacy of systematic bright light exposure on sleep among women with a history of gynecologic cancer.

Methods: Women aged 18-75 with a history of non-metastatic ovarian or endometrial cancer who completed primary chemotherapy and endorsed current sleep disturbance (Pittsburgh Sleep Quality Index (PSQI) global score ≥ 5) were randomized 1:1 to receive 45 minutes of bright white light (BWL; $n = 9$) or dim red light (DRL; $n = 9$) every morning for 4 weeks via Re-Timer® glasses. Participants wore wrist actigraphs and completed sleep diaries for one week before the intervention, during the intervention, and for one week before a 3-month follow-up appointment. Participants also completed assessments of subjective sleep quality at baseline (T1), post-intervention (T2), and 3-month follow-up (T3).

Results: Of the 211 women with whom in-person or telephone contact was made, 62 (29.4%) completed telephone screening, of whom 35 (56.5%) were deemed eligible and 25 (17.7%) agreed to complete an in-person screening. Of those who completed in-person screening, 22 (88%) were deemed fully eligible and enrolled. One participant withdrew after consent but before randomization, leaving a randomized sample of 21. The retention rate at 3-month follow-up was 85.7%, and protocol adherence was >85%. Mixed model ANOVAs demonstrated that the number of nighttime awakenings, per actigraphy, increased over time for the DRL condition, while it decreased from T1 to T2 before returning to baseline at T3 for the BWL condition ($F_{2,30} = 2.70$, $p = 0.08$, $\eta_p^2 = .025$). Additionally, women in the BWL group reported significant improvements over time on the PSQI global score ($F_{2,16} = 2.90$, $p = 0.08$, $\eta_p^2 = 0.27$) compared to participants in the DRL group. The percentage of DRL participants with healthy sleep (i.e., PSQI score < 5) was 0% at T1, 11.1% at T2, and 0% at T3. For BWL participants these percentages were 11.1% at T1, 44.4% at T2, and 11.1% at T3. These percentages were statistically significantly different at T2 ($\chi^2(1) = 3.88$, $p = 0.05$).

Conclusions: Results suggest that BWL can be feasibly implemented among women with a history of ovarian or endometrial cancer, and may be an effective strategy to diminish sleep disturbance in this population.

4

8:00 AM-9:15 AM

OPTIMIZING EXPRESSIVE WRITING INTERVENTION TO IMPROVE SLEEP QUALITY AMONG CHINESE BREAST CANCER SURVIVORS

Qian Lu, MD, PhD¹, Ivan Wu, Ph. D.¹¹MD Anderson Cancer Center, Houston, TX

Background: Sleep problems are common among Chinese American breast cancer survivors, however, few studies have tested interventions to improve sleep quality among this population.

Purpose: The study evaluated whether a culturally sensitive expressive writing intervention improved sleep quality.

Methods: Chinese-speaking breast cancer survivors ($N=136$) in the U.S. were randomly assigned to one of three conditions to write three 30-minute weekly essays: a cancer-fact condition to write about facts relevant to the cancer experience for three weeks; a self-regulation condition to write about deepest feelings at week 1, stress and coping at week 2, and finding benefits at week 3; or an enhanced self-regulation condition to write about stress and coping at week 1, deepest feelings at week 2, and finding benefits at week 3. Sleep quality was assessed using one item from the Pittsburgh Sleep Quality Index (PSQI) at baseline, 1-, 3-, and 6-month follow-up.

Results: A linear mixed effect model regressed sleep quality on condition, time (i.e., study week), and a condition by time interaction with relevant covariates. Adjusted results showed no main effects of condition, yet a significant condition by time interaction ($b = -.11$, $SE = .05$, $p = .034$). Specifically, sleep quality improved significantly more in the enhanced self-regulation condition compared to the control.

Conclusion: This pilot study shows that expressive writing has the potential to improve sleep quality for Chinese American cancer survivors. Future efforts are warranted to replicate the study in a larger trial, disseminate, and implement this low-dose and brief intervention in community and clinical settings.

Symposium 4

8:00 AM-9:15 AM

PRIMARY CARE PATIENTS' PERSPECTIVE IN THE MODERN ERA: DIGITAL TECHNOLOGY, POLICY CHANGES, AND SHIFTING PERSPECTIVES.

Dara Steinberg, Ph.D.¹, Nathalie Moise, n/a¹, Andrea T. Duran, PhD², Molly L. Tanenbaum, PhD³, Nataliya Pilipenko, Ph.D./ABPP⁴

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Patient centered care has become the cornerstone of modern medicine, prompting primary care settings to foster opportunities for engaging patients in their health care. While approaches like shared-decision making (Stacey et al., 2017) and motivational interviewing (Miller & Rollnick, 2002) have been shown to be beneficial, these approaches remain underutilized in primary care. Leveraging technology has been proposed to foster shared decision making in physical and mental health care but also faces challenges. For instance, the Internet provides increased access to information for patients yet the quality of the information available has been found to be variable in various medical subject areas (e.g., Fuzzell et al., 2019; Hargrave et al., 2006; Wiley et al., 2017).

This symposium will focus on the interplay between patient-centered care, decision-making, and technology in the domains that are particularly salient for the primary care setting. Presentations will include: beliefs about vaccinations and how that drives decisions regarding vaccination choices; beliefs about collaborative care and use of technology to more effectively engage patients in and integrate mental health care into the primary care setting and overcoming barriers and obstacles to adopting diabetes management devices. The diversity in topics will help present how underlying principles regarding understanding patients, their beliefs, and choices, as well as considering the role of technology can be applied across diverse clinical situations, populations, and settings.

References

- Fuzzell LN, Richards MJ, Fraenkel L, Stark SL, Politi MC. What information can the lay public find about osteoporosis treatment? A descriptive study coding the content and quality of bisphosphonate information on the internet. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2019. Epub 2019/07/13. doi: 10.1007/s00198-019-05008-4. PubMed PMID: 31297567.
- Hargrave DR, Hargrave UA, Bouffet E. Quality of health information on the Internet in pediatric neuro-oncology. *Neuro-oncology*. 2006;8(2):175-82. Epub 2006/03/15. doi: 10.1215/15228517-2005-008. PubMed PMID: 16533758; PubMed Central PMCID: PMC1871939.
- Miller WR, Rollnick S. *Motivational interviewing (2nd edition): Preparing people for change*. 2002: New York: Guilford Press.
- Wiley KE, Steffens M, Berry N, Leask J. An audit of the quality of online immunisation information available to Australian parents. *BMC public health*. 2017;17(1):76. Epub 2017/01/15. doi: 10.1186/s12889-016-3933-9. PubMed PMID: 28086764; PubMed Central PMCID: PMC5237325.

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1

8:00 AM-9:15 AM

PATIENT PERCEPTIONS OF A SELF-DELIVERED ELECTRONIC DEPRESSION SCREENING, ACTIVATION AND EDUCATION TOOL: ARE BRIEF, BEHAVIORAL INTERVENTIONS FEASIBLE IN WAITING ROOMS OF PRIMARY CARE SETTINGS?

Nathalie Moise, n/a¹, Andrea T. Duran, PhD²

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Introduction: Although collaborative care (CC) for depression is among the most well studied, effective programs for treating depression in the primary care setting, suboptimal patient-provider communication at the critical time of referral may contribute to high initial no show rates limiting program effectiveness in real world settings. Primary care settings are increasingly incorporating digital health technology into clinical workflows (screening with tablets), but few interventions have sought to use technology to deliver brief, behavioral interventions in the waiting room. We sought to assess acceptability and perceptions of an electronic web-based tablet-delivered tool that delivers depression screening, patient activation, psychoeducation and direct referral to CC.

Methodology: The candidate interface (depression screening, video-assisted patient activation, treatment preference assessment, psychoeducation) was designed and revised based on semi-structured interviews with 10 national experts, 12 patients, and 32 providers as well as a depression treatment initiation systematic review. We recruited 29 (planned 60 patients) end-users from an academic primary care clinic and observed, recorded and guided participants through a usability protocol where they completed goal-oriented tasks and pre/post-questionnaires to assess acceptability, usability (System Usability Scale [SUS]) and overall satisfaction with the tool. We employed descriptive statistics for quantitative responses and content analyses to code qualitative responses for themes.

Results: The average age of 29 participants was 61.8±11.8 years; 72.4% were female, 44.8% Hispanic/Latino and primarily Spanish speakers, 31.0% Black/African American. We found that at least 55.2% had at least mildly elevated depressive symptoms. For the final version of the tool, 86.6% would be comfortable using the tool in the waiting room; 77% were likely to talk to their PCP about depression after using the tool; 61% felt questions about pros and cons were addressed; 83% felt helpful in deciding which medication to choose but 72% still felt that they wanted to discuss with their PCP before making a final decision about depression care.

Discussion: We demonstrate high acceptability and interest in using self-administered, enhanced screening and activation technology in waiting rooms. Our preliminary results suggest that meeting patients “where they are” may be one approach to enhancing use of digital behavioral health technology as well as engagement in depression treatment in collaborative care settings, particularly among patients with low literacy or sub optimal access/adherence to digital health interventions at home.

2

8:00 AM-9:15 AM

GETTING ONBOARD (OVERCOMING BARRIERS & OBSTACLES TO ADOPTING DIABETES DEVICES): A PILOT STUDY TO SUPPORT USE OF CONTINUOUS GLUCOSE MONITORING (CGM)

Molly L. Tanenbaum, PhD¹, Christine Wu, BA², Sarah Hanes, BA¹, Korey Hood, PhD¹

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Type 1 diabetes (T1D) is a burdensome disease with demanding self-management tasks to optimize glycemic control and prevent short- and long-term complications. Advances in diabetes devices such as CGM have enabled improved glycemic control, reduced risk of complications, and improved quality of life. However, a minority of adults (18-50) with T1D currently use CGM and a sizeable proportion quit CGM within the first year due to several known barriers including cost; being bothered by alerts and alarms from the device; and other factors. The American Diabetes Association's 2019 Standards of Care state that CGM use “requires robust and ongoing diabetes education, training and support”; there is a great need for new research to determine what programs would best provide this support. Our goal is to provide the necessary education and support so that adults with T1D can adopt CGM and obtain optimal benefit from this technology. To that end, we are piloting and iteratively refining a behavioral intervention package, ONBOARD, in a small sample of adults with T1D (20 in their first year of CGM use and 20 not currently using CGM). The intervention is delivered during four 60-minute videoconference sessions over the course of 12 weeks. Intervention content includes a social learning component (first-person narratives from adults with T1D who use CGM) and reinforces problem-solving skills related to CGM use. We will obtain participant feedback on intervention content from focus groups and use this feedback to refine the intervention. This presentation will focus on describing the aims, design and methods of this pilot study and will present preliminary data. We will also discuss next steps for this research, including plans for a larger randomized controlled trial of ONBOARD. Finally, we will discuss implications for adapting these efforts for future diabetes technologies (e.g. closed loop systems in which an insulin pump and CGM use an algorithm to determine insulin dosing and have potential to reduce self-management burden) and relevance of a diabetes device adoption intervention such as this in other clinical settings (e.g. type 2 diabetes; primary care).

3

8:00 AM-9:15 AM

PATIENT VACCINATION PERCEPTIONS: IMPROVING UNDERSTANDING OF EARLY LIFE VACCINATION PRACTICES AND CAREGIVER PERCEPTIONS. DOES VACCINATION TYPE PLAY A ROLE?

Nataliya Pilipenko, Ph.D./ABPP¹¹Columbia University, College of Physicians and Surgeons, New York, NY

Introduction: Although pediatric vaccinations are regarded among the most successful public health achievements, immunization rates are subject to imperfect uptake (WHO, 2017). Moreover, Latino children in the US are under immunized despite ongoing research and programmatic interventions (Adorador et al., 2011). Caregivers are among the 'key players' in pediatric health, but to date, study of pediatric vaccination perceptions received limited research attention within Family Medicine (FM) settings in primary care. This project aims to improve understanding of caregivers' decision-making process related to routine age-based pediatric vaccinations, as compared to annual seasonal influenza vaccinations. This research is especially important given recent rise in anti-vaccination movement (Azhar et al., 2018).

Methods: Survey incorporating modified Parent Attitudes about Childhood Vaccines (PACV) questionnaire (Opel et al., 2013) and items examining vaccination-related beliefs based on the Cognitive Model of Empowerment (Vallee-Tourangeau et al. 2017) was developed and culturally adopted for English and Spanish. Participant (N=100) adult caregivers of children 0-24 months old are recruited during clinic visits, asked to complete the survey and provide consent for child's vaccination records review.

Results: Data collection in currently underway (n = 42, 57.14% Spanish speakers). Data will be analyzed to understand connections between caregivers' beliefs and vaccination-related behaviors. Differences in behaviors and beliefs between routine and influenza vaccinations will also be examined. It is anticipated that the results of this study will allow improved understanding of caregiver factors implicated pediatric vaccination decisions.

References

- Adorador A, McNulty R, Hart D, Fitzpatrick JJ. Perceived barriers to immunizations as identified by Latino mothers. *J Am Acad Nurse Pract.* 2011 Sep;23(9):501-8. doi: 10.1111/j.1745-7599.2011.00632.x
- Azhar H, Syed A, Madiha A, Sheharyar H. The Anti-vaccination Movement: A Regression in Modern Medicine. *Cureus.* 2018 Jul 3;10(7):e2919. doi: 10.7759/cureus.2919.
- Opel DJ, Taylor JA, Zhou C, Catz S, Myaing M, Mangione-Smith R. The relationship between parent attitudes about childhood vaccines survey scores and future child immunization status: a validation study. *JAMA Pediatr.* 2013 Nov;167(11):1065-71. doi: 10.1001/jamapediatrics.2013.2483.
- Vallée-Tourangeau G, Promberger M, Moon K, Wheelock A, Sirota M, Norton C, Sevdalis N. Motors of influenza vaccination uptake and vaccination advocacy in healthcare workers: Development and validation of two short scales. *Vaccine.* 2018 Oct 22;36(44):6540-6545. doi: 10.1016/j.vaccine.2017.08.025.
- World Health Organization. Immunization coverage. Fact Sheet. Updated July 2017. Retrieved from <http://www.who.int/mediacentre/factsheets/fs378/en/>

Symposium 5

8:00 AM-9:15 AM

INTERDISCIPLINARY CHRONIC PAIN MANAGEMENT - BEST PRACTICES IN ASSESSMENT, TREATMENT, AND TRAINEE EDUCATION

Amy M. Goetzinger, PhD¹, Seema M. Patidar, PhD², Skye Ochsner Margolies, PhD³, Maryam Jowza, MD², Dominika James, MD¹UNC - Chapel Hill, Chapel Hill, NC; ²University of North Carolina at Chapel Hill, Chapel Hill, NC; ³UNC-Chapel Hill, Chapel Hill, NC

Comprehensive and successful chronic pain management hinges on an interdisciplinary care model that recognizes the complexities of chronic pain and the importance of treating individuals struggling with chronic pain in the context of the biopsychosocial model. The proposed symposium provides a snapshot into four different facets of an interdisciplinary approach currently practiced and taught at an academic medical center. It is our goal that this symposium will both educate and spark discussion with our behavioral medicine peers.

The first presentation, given by a pain psychologist, will review concurrence of substance abuse and mental health disorders in patients with chronic pain and the consequent barriers to treatment. Based on clinical experience, data, and lessons learned in both the inpatient and outpatient medical setting, her discussion will explore how assessment and treatment planning by pain psychologists can assist with these challenges and contribute to improved functioning, quality of life, pain control, psychological adjustment, and treatment adherence. She will expand this discussion to highlight how this approach can be best incorporated into an interdisciplinary model of care.

The second presentation, given by a pain psychologist, will outline the assessment and treatment of sleep disturbance in the context of chronic pain. The complex relationship between pain and sleep will be reviewed with an emphasis on pain catastrophizing and sleep-related cognitive arousal. Current cognitive behavioral and acceptance based interventions practiced in the outpatient setting will be discussed and illustrated with case reports.

The third presentation, given by a pain psychologist, will present on the important role that pain psychologists play in perioperative pain management. She will discuss Enhanced Recovery After Surgery (ERAS) pathways and a novel protocol implemented at an academic medical center for women undergoing benign laparoscopic gynecologic surgery, including psychoeducation and brief behavioral intervention via phone consultation with pain psychology. Data will be presented and discussed in the broader context of feasibility, other treatment models, and future considerations.

The last presentation is from a pain physician and will review an innovative, interdisciplinary simulation curriculum utilizing standardized patients to assist medical trainees specializing in pain management in navigating challenging patient encounters. Her presentation will outline the goal of the pilot program in improving medical trainee confidence and the model for inter-professional feedback utilizing pain psychology expertise. Data will also be presented examining trainee evaluations of the learning experience and expectations for future training.

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1 8:00 AM-9:15 AM 2 8:00 AM-9:15 AM

ASSESSMENT AND TREATMENT OF CHRONIC PAIN, MENTAL HEALTH AND SUBSTANCE ABUSE COMORBIDITIES - BEST PRACTICES AND LESSONS LEARNED FROM OUTPATIENT AND INPATIENT ACADEMIC MEDICAL SETTINGS

Amy M. Goetzinger, PhD¹

¹UNC - Chapel Hill, Chapel Hill, NC

Mental health (MH) and substance abuse (SA) comorbidities are common among chronic pain patients and can significantly impact treatment adherence, as well as progress towards therapeutic goals and outcomes. Assessment and treatment planning by pain psychologists can assist with these challenges and contribute to improved functioning, quality of life, pain control, psychological adjustment, and treatment adherence. This discussion focuses on a review of best practices in the assessment and treatment planning for patients with chronic pain and MH/SA comorbidities in the outpatient and inpatient medical settings.

Clinically informative and appropriate screening and assessment psychometrics will be presented, both for outpatient and inpatient use, for brief screening as well as comprehensive psychological assessment. Common behavioral treatment recommendations will be reviewed, along with discussion of how to address patient barriers related to access and follow through with treatment recommendations. Data have been collected as part of clinical research from patients treated at an academic medical center.

Data pertaining to patients with chronic pain in the outpatient setting will be presented related to prevalence of psychological comorbidities (trauma history, depression and anxiety disorders, in particular), prevalence of Opioid Use Disorder (OUD) and other SA comorbidities, and adherence to treatment recommendations. Best practices related to appropriate follow up and treatment planning in the outpatient setting will be discussed, with particular focus on medically and psychologically complex, challenging cases.

Data pertaining to patients with chronic in the inpatient medical setting also will be presented, along with recommendations for best practices in addressing chronic pain and associated MH and SA comorbidities as part of an acute pain medical service. Care transition from inpatient to outpatient treatment will also be reviewed, along with strategies to address barriers to transitioning care.

In addition, data from a new initiative aimed at better understanding and improving multidisciplinary treatment for patients with comorbid chronic pain and OUD in the inpatient medical setting also will be presented. The latter program was developed systematically using "test cases" as part of a pilot feasibility study. Methodological considerations, barriers to treatment, screening and assessment refinement process, optimization of care coordination with other treatment providers, and transition to outpatient methadone maintenance or Suboxone treatment along with psychological therapy will be discussed.

OPPORTUNITIES FOR IMPROVING THE PERIOPERATIVE PAIN EXPERIENCE: UTILIZATION OF A BRIEF PSYCHOLOGICAL INTERVENTION AS PART OF INTERDISCIPLINARY ENHANCED RECOVERY AFTER SURGERY (ERAS) PATHWAYS

Seema M. Patidar, PhD¹

¹University of North Carolina at Chapel Hill, Chapel Hill, NC

Enhanced Recovery After Surgery (ERAS) pathways are interdisciplinary, patient-centered, evidence-based protocols intended to improve perioperative patient experiences and surgical outcomes. Surgeons, anesthesiologists and nursing staff are primarily involved in developing and implementing ERAS pathways, targeting both physical and psychological factors. In the context of more thoughtful perioperative opioid prescribing practices, there has been more attention to alternative strategies for improving the perioperative pain experience. One strategy for improving pain related outcomes is addressing patient expectations prior to surgery through psychoeducation regarding upcoming surgery, related pain, and pain management. Additionally, providers may consider more comprehensive risk assessment and inclusion of pain psychology interventions, which can target pain related distress and substance use behaviors.

Providers at our institution chose to include an elective psychological intervention delivered by pain psychologists as part of the ERAS pathway for benign laparoscopic gynecologic surgeries, such as hysterectomy and myomectomy. Many women seeking gynecologic surgery have comorbid chronic pain, such as pelvic pain, and psychological distress, including symptoms of anxiety and depression. Psychological factors can have notable influence on the pain experience and relevant clinical outcomes. Coping skills interventions have been shown to reduce pain, anxiety and depression in different settings.

In this study, all patients pursuing surgery received additional psychoeducation (pain coping skills workbook) and were offered phone consultation with a pain psychologist. The phone calls included assessment of pain, expectations for surgery, risk assessment for poor outcomes, review of psychoeducation and introduction to diaphragmatic breathing as a coping skill. Majority of women in this sample had chronic pain at the time of surgery, and over 40% had clinically significant levels of psychological distress (anxiety or depression). Data suggests that psychoeducation and participation in pain psychology consultations may add an additional level of benefit to patients during the perioperative time period, but more research is necessary to further explore these relationships.

Feasibility of implementing perioperative interventions and future considerations for improving pain related surgical outcomes will be reviewed. Other ERAS targets will be presented for discussion. Interdisciplinary models to promote adaptive coping with perioperative pain and the surgical experience will be introduced for comparison, including postoperative intervention in an inpatient setting and utilization of telehealth.

3

8:00 AM-9:15 AM

ASSESSMENT AND TREATMENT OF CHRONIC PAIN AND SLEEP DISTURBANCE USING A HYBRID COGNITIVE BEHAVIOR THERAPY FOR INSOMNIA (CBT-I) AND ACCEPTANCE AND COMMITMENT THERAPY (ACT) TREATMENT MODEL

Skye Ochsner Margolies, PhD¹¹UNC-Chapel Hill, Chapel Hill, NC

Chronic pain, a common and costly disorder, affects approximately 1.5 billion people worldwide. Current treatment approaches focus increasingly more on pain reduction and increased functioning in the context of chronic pain rather than pain elimination. Sleep is a critical component of functioning and quality of life and the presence of clinical insomnia among chronic pain patients has been well established with an estimated 50–70% of chronic pain patients reporting pain-related insomnia. Consequences of chronic pain and insomnia, both as independent syndromes and comorbid with each other, include mood disturbances, medication habituation, memory impairment, daytime fatigue, vocational and interpersonal difficulties, increased healthcare utilization, impaired health status, and accidents. As we look to different approaches to improve the quality of life of our patients with chronic pain, the treatment of sleep has become an important area of clinical and research interest.

Although the impact of insomnia on pain has historically been considered bidirectional, recent research demonstrates that this relationship is more complex and driven in large part by pain catastrophizing and sleep related cognitive arousal. Psychological flexibility has naturally emerged as an area of interest in the non-pharmacological treatment of chronic pain and insomnia as independent syndromes. More recently, this exploration has expanded to the concurrence of chronic pain and insomnia with an emphasis on third-wave cognitive-behavioral approaches emphasizing mindfulness and acceptance as means of increasing psychological flexibility in this setting.

The proposed presentation will outline the current research on the interplay of chronic pain and sleep disturbance and discuss assessment and treatment of these frequent concurrent disorders. Case reports from our outpatient pain management clinic will be presented outlining sessions and treatment components of a hybrid CBT-I/ACT treatment approach delivered for patients with comorbid chronic pain and insomnia in both individual and group formats. Data will also be presented focusing on associations between changes in processes of psychological flexibility (pain interference, pain acceptance) with changes in sleep outcomes (insomnia severity, beliefs about pain and sleep, sleep efficiency) in the context of chronic pain and psychological comorbidities.

4

8:00 AM-9:15 AM

INTERDISCIPLINARY EDUCATION OF PAIN MEDICAL FELLOWS IN TREATMENT OF CHRONIC PAIN, PSYCHOPATHOLOGY AND SAFETY CONCERNS USING SIMULATION TECHNIQUES IN THE CLINIC SETTING - HOW CAN PSYCHOLOGISTS ASSIST?

Maryam Jowza, MD¹¹University of North Carolina at Chapel Hill, Chapel Hill, NC

In light of the current “opioid epidemic, interaction with patients who present with chronic pain have become increasingly challenging, even for pain physicians. Medical trainees in pain management programs report discomfort with patient encounters especially when addressing comorbid psychiatric illness. As a result, we developed a pilot multidisciplinary simulation curriculum utilizing standardized patients to assist with navigating difficult patient encounters. The goal of our program is to improve trainee confidence in addressing difficult patient encounters while maintaining an enjoyable learning environment

This curriculum takes place in our outpatient clinic where clinical scenarios developed with input from both pain physicians and clinical pain psychologists are played out with assistance of trained actors. One medical trainee is assigned to each case, and the interactions are recorded and played remotely to other trainees with board certified pain physicians and clinical pain psychologists present. After each scenario, the multidisciplinary team debriefs learners.

The debriefing session is used as an opportunity to assess the scenario, review pertinent psychopathology, and explore implications of treatment decisions. As part of the debriefing, the clinical psychologists may also engage with “role play” and enter the scenario with the standardized patient while the trainees observe the interaction.

At the conclusion of all scenarios, learners are asked to complete a survey to assess if educational objectives were met. This curriculum is used to teach, rather than evaluate trainees. Trainee evaluation of the curriculum indicated that all (n=15) 100% noted the experience was enjoyable and educational with 93% stating they would strongly prefer more multidisciplinary simulation in their fellowship training. Further when asked if after the session, they felt more comfortable with approaching challenging patients 15/15 agreed or strongly agreed. When asked if they would change their current practice/approach because after the session, 13/15 strongly agreed and 2/15 agreed.

High-fidelity scenarios developed and debriefed with input from clinical psychologists provides invaluable training for future and current pain clinicians. Of the trainees who completed our simulation curriculum, all agreed it was beneficial, with nearly all trainees preferring more multidisciplinary simulation in the future.

Symposium 6

8:00 AM-9:15 AM

ACCELERATING BEHAVIORAL HEALTH RESEARCH WITH BIOMARKERS: CHALLENGES AND OPPORTUNITIES

Nancy Jallo, PhD¹, Patricia A. Kinser, PhD, WHNP-BC, RN², Lana Sargent, PhD³¹Virginia Commonwealth University, Williamsburg, VA; ²Virginia Commonwealth University School of Nursing, Richmond, VA; ³Virginia Commonwealth University, Ashland, VA

The importance of behavioral research using interviews, surveys, experimental designs, and observation research methods is well-established. However, researchers are often faced with the enduring questions of: do the significant results impact health outcomes and what mechanism or pathway may mediate these results and outcomes? Behavioral research that incorporates biomarkers is, by nature, multidisciplinary and may accelerate our understanding of the challenges and inherent complexities in human behavior change and health outcomes across a broad range of health and development states throughout the lifespan. However, incorporating biomarkers as an objective measure of health outcomes is not without challenges. Researchers are confronted with issues related to making theoretical and conceptual connections, assessing analytic validity, analyzing data, and interpreting the results. In this symposium, three research teams will present research integrating behavioral and biomarker measures in populations across the lifespan and provide examples of challenges faced and addressed to accelerate behavioral health research. Drs. Brown and Jallo will discuss integrating inflammatory and microbiota biomarkers in research focused on infants and pregnant women and provides a foundation for understanding the role of microbiota and preterm infant growth as well as the biologic pathways linking negative and positive emotions to health outcomes and well-being. Drs. Kinser and Lapato will discuss challenges and opportunities related to the use of DNA methylation as a biomarker to predict and categorize individuals at risk of complex disorders, such as perinatal depression, preterm birth, and substance use. Dr. Sargent will discuss the benefits and challenges of using “big data” to identify biological markers for disease prediction of complex diseases of aging such as cognitive impairment and physical frailty.

Learning Objectives.

1. Explore how behavioral health research may be accelerated by the integration of biomarkers into a research design in various populations across the lifespan.
2. Discuss possible challenges researchers may encounter and potential strategies to address those concerns.

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8:00 AM-9:15 AM

THE USE OF BIOMARKERS IN MATERNAL AND CHILD HEALTH

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Objective: The psychophysiological state of a woman impacts not only her health but potentially the health of her infant as well. While stress is a pervasive phenomenon experienced by women throughout their lifespan, pregnancy is an essentially a vulnerable period. Psychosocial stress is associated with anxiety, fatigue, and depressive symptoms, which are risk factor for negative health outcomes for both the woman and the infant. It is proposed these factors influence health through a behavioral as well as an inflammatory pathway. The use of psychometric measures of stress and associated symptoms are well-known. The challenge is to integrate a physiologic or biomarker to examine the inflammatory pathway to provide a deeper understanding of this problem. In fact, this inflammatory pathway has been linked to preterm birth which is another source of stress for the mother and health challenges for the infant born preterm. Care of the preterm infant is complex, due in part to highly recognized and frequently studied behaviors of the preterm infant and the lesser-studied physiological challenges. A newer and less well-known physiological consideration is the infant's microbiome, the community of microorganisms, both helpful and harmful, that inhabit the human body. The infant's microbiome is influenced by the maternal microbiome and various aspects of NICU care such as feeding. One way the maternal microbiome influences the infants is through kangaroo care (KC) or skin-to-skin care. KC increases the chance of the infant being colonized with the mother's flora. The composition and diversity of the microbiome is thought to influence the physical growth of the preterm infant. In this talk, we will discuss the following: 1) key concepts about using inflammatory and microbiota biomarkers to study health outcomes in women and infants; 2) to examine the relationships between psychometric and biologic measures of stress related symptoms and well-being in pregnant women; and 3) challenges and opportunities for developing a predictive model for intervention development and testing. Recent biobehavioral research on maternal stress, associated symptoms and resiliency, as well as the microbiome and preterm infant growth will be used to inform the discussion and highlight opportunities to advance our research and future work.

2

8:00 AM-9:15 AM

DNA METHYLATION AS A BIOMARKER IN RESEARCH STUDIES: CHALLENGES AND OPPORTUNITIES

Patricia A. Kinser, PhD, WHNP-BC, RN¹, Dana Lapato, PhD², Roxann Roberson-Nay, PhD³, Tim York, PhD⁴, Colleen Jackson-Cook, PhD⁵¹Virginia Commonwealth University School of Nursing, Richmond, VA; ²Virginia Commonwealth University; ³VCU School of Medicine, Virginia Institute for Psychiatric and Behavioral Genetics, Richmond, VA; ⁴VCU School of Medicine, Virginia Institute for Psychiatric and Behavioral Genetics; ⁵Virginia Commonwealth University School of Medicine Division of Molecular Diagnostics

Objective: Both genetic and environmental factors contribute to inter-individual variation in risk for complex disorders like depression, cancer, and substance misuse. The ability to predict disorder risk and severity from personal and/or family history is limited. As a result, there is considerable interest in identifying and using biological markers (i.e., biomarkers) in both clinical and research applications. Biomarkers offer an opportunity to identify and classify individuals by risk for developing a complex disorder. Recently, DNA methylation has gained attention as a potential measure for understanding not only complex trait pathoetiology but also for serving as a biomarker to predict and categorize individuals by risk for complex disorders. In this talk, we will discuss the following: (1) key concepts about DNA methylation in general; (2) whether/how DNA methylation might be used as a biomarker for identifying risk for complex traits; (3) the potential for using DNA methylation markers to impute information about individual behaviors like tobacco smoking history or alcohol consumption; (4) challenges and opportunities for the use of DNA methylation in behavioral health research. Recent DNA methylation studies of perinatal depression by this research team will be used to inform the discussion and highlight opportunities for future work.

3

8:00 AM-9:15 AM

SHARED MECHANISMS FOR COMPLEX DISEASES: A MODEL FOR USING BIG DATA TO STUDY COMPLEX SYSTEMS

Lana Sargent, PhD¹, Mike Nalls, PhD², Martina Mueller, PhD³, Stefania Bandinelli, MD, PhD⁴, Sarah Lageman, Ph.D., ABPP-CN⁵, Andrew Singleton, PhD⁶

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There is an emerging understanding for the shared clinical and biological mechanisms for many diseases of aging. These include clinical and biological factors that contribute risk for the development of complex diseases of aging such as physical frailty and cognitive impairment. As a result, there is considerable interest in using “big data” and innovative machine learning statistical techniques to predict diseases before they occur. Machine learning statistics has the ability to combine large numbers of clinical and biological markers (i.e. protein, genomic) to identify and classify individuals by risk for developing a complex disorder. These methods can uncover the potential clinical and biological factors for understanding not only complex traits but can also serve as a model to predict and categorize individuals by risk for complex diseases of aging. In this talk, we will discuss the following: (1) key concepts about using “big data” to study disease of aging; (2) whether/how clinical, protein, and genomic markers might be used for identifying risk for complex diseases; (3) the potential for using machine learning statistics to develop predictive models for the detection of disease in the clinical setting; (4) challenges and opportunities for developing predictive models using biological data from multiple “big data” repositories/longitudinal studies of aging. Recent predictive models developed by this research team using clinical and biological data will be used to inform the discussion and highlight opportunities for future research.

Symposium 7

8:00 AM-9:15 AM

COUPLE COMMUNICATION IN CANCER: NOVEL APPROACHES TO EXAMINING PROCESSES AND MECHANISMS

Laura S. Porter, PhD¹, Shelby Langer, PhD², Katherine Ramos, Ph.D.¹, Joan M. Romano, Ph.D.³, Tracey A. Revenson, PhD⁴

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For patients and their intimate partners, cancer poses significant challenges that can negatively impact both individuals and their relationship. Evidence suggests that couples' ability to communicate effectively plays a major role in the psychological adjustment of both individuals, their relationship quality, and their ability to cope with the effects of cancer and its treatment. However, research on couple communication in cancer has been limited by reliance on global self-report measures of communication, cross-sectional designs, samples limited to a single cancer type, and lack of attention to mechanisms by which communication influences outcomes. This symposium will present data from an ongoing multi-site, multi-method longitudinal study of couple communication in patients with breast, colorectal, and lung cancer and their partners. To date, 232 couples have completed the first phase of the study which includes (a) baseline global self-report measures of communication, psychological adjustment, and relationship functioning, (b) ecological momentary assessment (EMA) of communication, mood, and relationship functioning collected twice/day via smartphone for two weeks, and (c) a lab-based video-recorded couple conversation from which we derived objective measures of communicative behavior and a vocal measure of emotional arousal, fundamental frequency (f_0). The first speaker will present findings from the EMA data to evaluate the relationship intimacy model in explaining links between communicative behavior and patient and partner psychological and relationship adjustment. The second speaker will focus on objective indicators of couples' communicative behavior during a cancer-related discussion using a novel coding scheme to measure positive and negative approach and distancing behaviors. She will present data on reliability, factor structure, and construct validity through associations of the behavioral scales with self-report measures of communication and adjustment. The third speaker will focus on f_0 as an innovative method of assessing emotional arousal, the unique advantages of measuring f_0 in couple conversations, and associations between f_0 and self-report measures of communication. The discussant will summarize findings and discuss their implications for measurement, theory, and content of efficacious interventions to improve couples' communication and adjustment.

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1

8:00 AM-9:15 AM

THE RELATIONSHIP INTIMACY MODEL OF COUPLE ADAPTATION TO CANCER: SUPPORT FROM A PROSPECTIVE, LONGITUDINAL, SMARTPHONE-ENABLED ECOLOGICAL MOMENTARY ASSESSMENT STUDY

Shelby Langer, PhD¹, Michael Todd, PhD¹, Joan M. Romano, Ph.D.², Niall Bolger, PhD³, Jonathan Bricker, PhD⁴, Karen L. Syrjala, PhD⁵, John Burns, PhD⁶, Francis J. Keefe, Ph.D.⁷, Timothy Strauman, PhD⁷, Julie Gralow, MC², Kelly Westbrook, MD⁷, Veena Shankaran, MD⁸, S Yousuf Zafar, MD⁹, Renato Martins, MD¹⁰, Neeta Ghosh, MA, MPH⁵, Laura S. Porter, PhD¹¹

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Avoidant communication has been linked to poor psychosocial adjustment among persons with cancer and their partners. The relationship intimacy model of couples' adaptation to cancer (Manne & Badr, 2008) posits that the mechanism by which compromising behaviors such as avoidance are linked to maladjustment is through reduced feelings of closeness (i.e., intimacy). Prior studies testing this model have been limited by cross-sectional designs and retrospective measures. We used ecological momentary assessment to test this model in real time. Patients and caregivers completed assessments via smartphone between 12 and 2pm (afternoon) and 8 and 10pm (evening) for 14 days (87% completion). Items assessed the extent to which they held back from expressing feelings in conversation with their partner, intimacy (relationship closeness and connectedness), distress (9 items from the POMS), and relationship satisfaction (1 item). Actor-partner interdependence mediation models were used to examine afternoon intimacy as a mediator of associations of concurrent holding back with same-day evening distress and relationship satisfaction. Participants were 232 patients with stage 2-4 breast, colorectal, or lung cancer and their caregivers: M (SD) age = 53 (12); 83% white; 68% female patients and 34% female caregivers. In analyses involving distress, significant actor indirect effects (IEs) emerged for both patients (IE = .015, CI = .005, .025) and caregivers (IE = .008, CI = .000, .015). On afternoons when patients and caregivers held back, they also reported less intimacy, which in turn was associated with their own greater distress that evening. A partner effect also emerged for caregivers such that on afternoons when caregivers held back, the patient reported less intimacy at that time, and reduced intimacy was associated with greater patient distress that evening (IE = .006, CI = .001, .012). In analyses involving relationship satisfaction, significant actor and partner IEs emerged for both patients and caregivers. On afternoons when patients and caregivers held back, they also reported less intimacy, as did their partners; less intimacy that afternoon, in turn, was associated with lower ratings of one's own relationship satisfaction that evening. These findings lend support for the relationship intimacy model and suggest that interventions designed to reduce holding back and boost intimacy (e.g., through shared positive experiences) may lead to better adjustment.

2

8:00 AM-9:15 AM

ASSOCIATIONS BETWEEN COMMUNICATION AND EMOTIONAL CO-REGULATION (FUNDAMENTAL FREQUENCY) IN COUPLES COPING WITH CANCER

Katherine Ramos, Ph.D.¹, Danielle Weber, M.A.², Melanie Fischer, Ph.D.³, Neeta Ghosh, MA, MPH⁴, Shelby L. Langer, Ph.D.⁵, Michael Todd, PhD⁶, Donald H. Baucom, Ph.D.⁷, Laura S. Porter, Ph.D.⁸

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The assessment of fundamental frequency (f0)—the perceived pitch of a human voice—presents a novel and innovative approach to study couples' communication in the context of cancer. F0 carries information about a person's internal emotional arousal, thus measuring f0 in couple conversations can capture communication of emotional information between partners. This presentation discusses the assessment of f0 as an innovative method to assess emotional arousal and summarizes preliminary findings about associations between f0 and individuals' emotional adjustment and emotional disclosure in the context of cancer.

Couples (n = 77 dyads) who are part of a larger observational study examining couples' communication in cancer completed measures of emotional disclosure and depression and then engaged in a 15-minute audio-recorded conversation about a cancer topic of their choosing, during which participants' f0 was measured. Patients were 69% female and 92% White, with a mean age 53.7 (SD = 12.0). Partners were 68% male and 88% White with a mean age 53.7 (SD = 13.6).

Patients' and partners' f0 were each averaged to capture overall levels of emotional arousal across the conversation. A two-intercept actor-partner interdependence model (APIM) was used to test within-individual and cross-partner associations of f0 with self-report measures. Patient-reported depression was negatively related to partner's average emotional arousal during their conversation about cancer (i.e., higher patient depression was associated with lower partner f0), $b = -9.85$ (SE = 4.21), $p < .01$. Partners' depression scores were not associated with patients' emotional arousal. A similar pattern emerged for holding back from disclosing emotions, with patient-reported holding back being negatively related to partner arousal, $b = -5.74$ (SE = 2.75), $p < .05$. Partners' holding back scores were not associated with patients' emotional arousal. No within-individual associations between questionnaire measures and f0 were found.

Results suggest that partners' f0 is associated with patients' depression and communication behavior. Partners' lower emotional arousal might be an unplanned response influenced by either a patient's depressive affect or hesitation to share concerns about difficult issues with cancer; in essence, the couple develops a system of discussing cancer at a less emotional level. Alternatively, a partner might knowingly hold back about cancer-related topics to not "push the issue" emotionally when patients are more depressed and holding back emotionally. We see this pattern in the context of when patients are more depressed. Most importantly, combining these findings with other results about communication behaviors will be needed to clarify whether this pattern is adaptive or maladaptive for the couple in this context.

3

8:00 AM-9:15 AM

OBSERVATIONAL ASSESSMENT OF COMMUNICATION AMONG PERSONS WITH CANCER AND THEIR CAREGIVING PARTNERS

Joan M. Romano, Ph.D.¹, Brian Baucom, Ph.D.², Donald Baucom, Ph.D.³, Laura S. Porter, Ph.D.⁴, Sara Bybee, L.C.S.W.², Blair Puleo, B.A.⁵, Alex Leger, B.A.², Rachel Hagan, B.S.⁶, Brandon Moncur, B.A.², Elizabeth Suggs, B.A.², Bin Suh, B.S.N.⁷, Neeta Ghosh, MA, MPH⁸, Shelby Langer, PhD⁵

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To understand couple communication in the context of cancer, it is crucial to assess behaviors that foster or discourage disclosure and intimacy, which have been linked to adjustment in patients and partners. However, few studies in this area have utilized direct observation, which provides unique information beyond that obtainable from self-report. The purpose of this study was to apply for the first time the Asymmetric Behavior Coding System (ABCS), a novel observational system that measures positive and negative approach and distancing behaviors, and to evaluate its psychometric properties in a large sample of couples coping with cancer. We examined reliability, factor structure, and construct validity through associations of the behavioral scales with self-report measures of communication (disclosure, holding back, protective buffering), intimacy, and relationship adjustment. Participants were 134 patients with stage 2-4 breast, colorectal, or lung cancer and their partners: M (SD) age = 54 (13); 86% white; 4.5% Latinx; 66% female patients and 36% female partners. Patients and partners completed self-report measures and engaged in a 15-minute video-recorded discussion about the patient's cancer and treatment. Six coders rated 22 behaviors on a 7-point scale separately for patients and partners for each 3-minute segment. Items loaded onto four factor-analytically derived scales: positive approach (6 items, e.g., disclosure, validation), positive distancing (4 items, e.g., minimization), negative approach (7 items, e.g., blame, defensiveness), and negative distancing (5 items, e.g., withdrawal, avoidance). Inter-rater reliabilities ranged from .82 to .99. Internal scale reliabilities ranged from .78 to .93. Positive approach was associated with self-reported disclosure ($r = .14$, $p = .022$), intimacy ($r = .18$, $p = .003$), and relationship adjustment ($r = .15$, $p = .019$). Negative approach was positively associated with holding back ($r = .17$, $p = .005$) and protective buffering ($r = .19$, $p = .002$), and inversely associated with intimacy ($r = -.32$, $p < .001$) and relationship adjustment ($r = -.36$, $p < .001$). Negative distancing was associated with protective buffering ($r = .16$, $p = .008$). Findings support the reliability and construct validity of the ABCS scales. Objective assessment of behaviors that enhance disclosure and intimacy has the potential to inform interventions to improve communication in couples coping with cancer.

Symposium 8

8:00 AM-9:15 AM

USING TECHNOLOGY TO BYPASS BARRIERS TO MIND-BODY CARE FOR HETEROGENEOUS MEDICAL POPULATIONS

Giselle K. Perez, PhD¹, Lunthita M. Duthely, Ed.D., M.S., B.A., RYT-200², Ethan G. Lester, PhD³, Sharon L. Lo, PhD⁴, Ana-Maria Vranceanu, PhD¹, Stephanie J. Sohl, PhD⁵

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Although mind-body treatments are associated with substantial emotional and physical health benefits, novel technology-based approaches to delivery (e.g., videoconferencing, web-based, smart phone apps, Computer Adapted Real Time; i.e., CART) are needed in order to overcome barriers to participation. Delivering mind-body interventions through technology requires careful adaptation that includes feedback from participants, proof of concept testing, and rigorous randomized controlled trials (RCTs). In line with SBM's 2020 theme of "Accelerating Our Science: Addressing Tomorrow's Health Challenges", this symposium brings together 4 examples of how mind-body interventions can be developed and delivered through a variety of technological means. First, *Giselle Perez* will describe a mixed methods approach to developing and piloting a video-based mind-body group program aimed at improving psychosocial coping and resilience among adolescent and young adult (AYA) cancer patients. Next, *Lunthita Duthely* will present on the feasibility and acceptability of a pilot mHealth intervention targeting internalized stigma to improve resilience and clinic appointment attendance for women living with HIV. *Ethan Lester* will then present results of three pilot RCTs of virtual mind-body groups aimed to improve resiliency among internationally diverse patients with neurofibromatosis (adolescents, adults, and adults who are deaf). Last, *Sharon Lo* will next present the results of an RCT of a self-regulation focused mind-body (e.g., mindfulness, deep breathing, biofeedback) intervention (*Heart Math*) against usual care for adolescents with Type 1 Diabetes. She will specifically examine changes in heart rate variability, and emotion regulation for this population. Dr. *Stephanie Sohl* will place these studies within the larger context of technology-based mind-body research and will discuss future directions for clinical research programs.

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1

8:00 AM-9:15 AM

HELPING ADOLESCENTS AND YOUNG ADULTS BOUNCE BACK: DEVELOPING A VIRTUAL MIND-BODY RESILIENCY PROGRAM FOR ADOLESCENT AND YOUNG ADULTS TRANSITIONING INTO POSTTREATMENT CANCER SURVIVORSHIP

Giselle K. Perez, PhD¹, Helen R. Mizrach, BS², Brett Goshe, PhD³, Emily A. Walsh, B.A.⁴, Lisa Kenney, MD⁵, Christopher Recklitis, Ph.D, MPH⁶, Jeffrey Peppercorn, MD, MPH⁷, Joseph A. Greer, PhD⁸, John Denninger, MD, PhD³, Elyse R. Park, Ph.D., MPH⁸

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Background: Adolescent and young adult cancer survivors (AYAs) are susceptible to experiencing chronic stress and adverse health outcomes. Physical effects of treatment may exacerbate typical adjustment problems and lead to functional impairments that interfere with educational, professional and social pursuits. AYAs thus often express feeling alone in their experiences. Despite these vulnerabilities, there is a lack of psychosocial programs that help AYAs cope with life after treatment. This talk will highlight our process to develop a virtual mind-body resiliency program for AYAs to improve coping and adjustment.

Methods: We adapted the program over 3 phases using an iterative design process. First, we conducted in-depth, individual and group interviews via video-conferencing with 18 AYAs to understand their posttreatment stressors, coping strategies, programmatic needs, and obstacles to participating in psychosocial services. We identified key themes, which we used to adapt the manual (Bounce Back). Second, we conducted two pilot test groups (n=3/group) to inform additional program refinements. Participants provided written and verbal qualitative feedback on the helpfulness, relevance, and acceptability following each session. Iterative manual revisions were made to incorporate this feedback. We finalized the program after reviewing qualitative findings with a diverse team of stakeholders (clinician, researchers, and AYAs).

Results: From 3/18-10/18, we conducted group interviews with 18 AYAs (mean age=21.43; 67% female). Themes reflected challenges with interpersonal relationships and self-confidence. Specifically, AYAs expressed a desire for 1) feeling understood, 2) developing a peer survivor network, and 3) learning tools to manage stress and process changes in the self. Participants in the test group (mean age=21.43; 33% female) reported that the program was helpful, enjoyable, convenient, and relevant to their survivorship experiences. In particular, participants noted that social support and validation offered by the peer group, exercises centered on self-concept/identity changes after cancer treatment, cognitive reframing methods, and the use of multiple relaxation response exercises were helpful treatment components.

Conclusions: Qualitative findings from key stakeholders were instrumental to adapting a virtual resiliency program that has the potential to connect and support a young cancer population who is otherwise widely geographically dispersed. We are currently examining the feasibility and efficacy of this program in a pilot RCT.

2

8:00 AM-9:15 AM

MEASUREMENTS, MONITORING, AND ME: DESIGNING AN MHEALTH INTERVENTION FOR WOMEN LIVING WITH HIV

Lunthita M. Duthely, Ed.D., M.S., B.A., RYT-200¹, Alex Sanchez Covarrubias, M.D.², Megan Brown, M.P.H.², Tanya Thomas, B.S.², Samantha Waddell, B.S. (c)³, JoNell Potter, Ph.D.²

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Individual-level barriers to HIV care (care) adherence are often interrelated. In the literature, HIV stigma is linked to depression, and directly affects HIV health outcomes among minorities (Earnshaw, Bogart, Dovidio, & Williams, 2013). A significant correlation exists between barriers to care, such as depression, and adherence to care; furthermore, endorsing multiple barriers to care was related to detectable viral load (Wawrzyniak, 2015). Resilience mitigates these barriers—resulting in positive health outcome such as increased medication adherence and HIV viral load suppression, among minority WLWH (Dale et al., 2014). Specifically, ethnic minorities living with stigmatized conditions, like cancer and HIV, deal with additional, multiple stressors, including racism, low health literacy, language barriers, and immigration challenges. For HIV treatment adherence, mHealth interventions are rapidly increasing. Modes of delivery range from telephonic delivery, text messaging, and full-blown apps (Cole-Lewis & Kershaw, 2010). Data permit real-time signaling and assessments, but the potential benefits of these technologies must be leveraged by individual considerations (Labrique et al, 2013; Pérez et al, 2015; Jack & Mars, 2014; Marent et al., 2018)—particularly for special populations, such as undocumented individuals or persons who have not disclosed their health status to others. Here we describe a feasibility/acceptability RCT of a short-term, longitudinal, mixed-methods, pilot mHealth intervention for WLWH (KL2TR002737). The qualitative arm informed the study design. Representative of the regional linguistic profile, data collection and interviews were conducted in three languages. Primary outcomes included study feasibility (enrollment) and acceptability (opened messages), and secondary outcomes (3 and 6 months) included resiliency (CD-RISC25), HIV stigma (HSS), medical mistrust (GBMM), HIV medication adherence, depressive symptomatology (PHQ-9), clinic attendance and HIV viral load suppression. Details about the methodology using technology, as well as case study results and future directions for women living with HIV will be discussed.

3

8:00 AM-9:15 AM

VIRTUAL MIND-BODY GROUPS IMPROVE RESILIENCY FACTORS IN INTERNATIONALLY DIVERSE PATIENTS WITH NF1, NF2 AND SCHWANNOMATOSIS: RESULTS OF THREE RANDOMIZED CONTROLLED TRIALS (RCTS) IN ADULTS, ADOLESCENTS AND PATIENTS WHO ARE DEAF

Ethan G. Lester, PhD¹, Jonathan Greenberg, PhD², Ana-Maria Vranceanu, PhD²

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Background: Patients with NF have lower quality of life (QoL) relative to the general population and cancer patients. Although biomedical treatments have greatly improved outcomes across NF patients an enormous need remains for interventions to increase resiliency in patients with NF across the lifespan. Our team has adapted a mind body program - The Relaxation Response Resiliency Program (3RP) - to be delivered via live videoconferencing groups for the specific needs of: 1) adults with NF1, NF2 and schwannomatosis (3RP-NF); 2) adolescents with NF1 and NF2 (Resilient Youth with NF; RY-NF); 3) adults with NF2 who are deaf (d3RP-NF-CART). The three programs teach the same core resiliency skills (i.e., gratitude, mindfulness, coping, optimism and social support) but have been iteratively tailored to each population through direct qualitative feedback and prior research. The programs are highly feasible, accepted and efficacious in improving QoL when tested individually against an attention placebo control via three separate RCTs. The use of technology also provides more access and eliminates barriers to participation/treatment. Here we report data on the efficacy of the three programs in improving resiliency factors over and above the attention placebo control.

Methods: Patients (63 adults, 51 adolescents, 45 patients who are deaf) were recruited through an international NF registry. Screening and consent occurred via live video, with CART for patients who were deaf. Data was collected electronically. The intervention programs and control (8 sessions; 90 minutes for adults, 45 for adolescents, and 60 for deaf adults) were delivered by a clinical psychologist. Participants in the intervention received a patient manual and age/symptom tailored meditation recordings for home practice.

Results: Although specific outcomes varied by population, participants in all three interventions experienced significant improvements ($p < .05$) in one or more resiliency factors over and above their respective attention placebo controls, with many of these improvements maintained at six months.

Conclusions: A virtual mind-body program adapted for the needs of adults, adolescents and patients with NF2 who are deaf was associated with sustained improvement in resiliency factors. Promoting resiliency may be particularly important for individuals with NF who are living with a chronic incurable condition with an unpredictable trajectory. Details and lessons learned on virtual mind body program adaptations, results compared by patient populations, future directions and implications for NF care will be discussed.

4

8:00 AM-9:15 AM

DEVELOPMENT OF A TECHNOLOGY MEDIATED INTERVENTION TARGETING EMOTION REGULATION SKILLS IN ADOLESCENTS WITH TYPE 1 DIABETES

Sharon L. Lo, PhD¹, Kiren Chaudhry, BA², Emily Fredericks, PhD³, Dana Albright, PhD³, Niko Kaciroti, PhD¹, Christine M. Hunter, PhD⁴, Alison L. Miller, PhD⁵

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Adolescence marks a time of heightened emotional reactivity and intensity as well as changes in one's ability to regulate thoughts, feelings, and behaviors. Therefore, adolescence serves as a period of risk for those with chronic medical conditions such as Type 1 Diabetes (T1D) in terms of medical adherence. Teens with poorer emotional awareness and ability to process emotions, skills that are critical to emotion regulation (ER), predict poorer metabolic control and adherence. Mindfulness-based strategies that act on ER processes have been suggested as important for improving adherence and health outcomes for youth with T1D (Salmoirago-Blotcher et al., 2018).

As part of an ongoing clinical trial (NCT03688919), we developed a technology-mediated intervention based on prior work that uses biofeedback to improve ER (Miller et al., 2018). Participants were adolescents aged 13-17 years who have been diagnosed with T1D for at least six months and have hemoglobin A1c (HbA1c) ≥ 7.0 . Teens were recruited from a hospital-wide registry of patients with T1D. Teens engaged in relaxation and biofeedback activities using a commercially-available program (HeartMath; McCraty et al., 2006) to learn diaphragmatic breathing and improve physiological coherence, as indexed by heart rate variability. Participants were randomly assigned to intervention group at enrollment. Teens were shown how to practice breathing and relaxation skills at home using a commercially-available mobile app (Insight Timer) that was downloaded on the participant's smartphone. They were asked to practice at least five minutes of guided breathing per day using the mobile app across a period of eight weeks. An incentive structure was designed to improve engagement in the technologically-based home practice: teens were asked to text a screenshot of Insight Timer use every day. For each screenshot, they were awarded with an entry into a raffle for a \$100 gift card. Additionally, if participants sent at least 4 screenshots per week, they had the opportunity to earn \$10 each week.

Here we describe the feasibility of delivering a biofeedback-mediated intervention with mobile-app based home practice to target emotion regulation skills. Outcomes included measures of heart rate variability that were collected at pre- and post-intervention as well as measures of ER, which included the Children's Emotion Management Scales (Zeman et al., 2000), Positive and Negative Affect Schedule for children (Ebesutani et al., 2011), and the parent-reported Perceived Stress Scale (Kupst et al., 2015). Results on intervention dosage and changes in heart rate variability and ER outcomes will be presented.

Symposium 9

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

NOVEL METHODS FOR CAPTURING SUBJECTIVE INTENSIVE LONGITUDINAL DATA WITHIN LONG TERM EPIDEMIOLOGICAL AND INTERVENTION STUDIES

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Health behavior theories and interventions have been criticized for their failure to incorporate dynamic within-person changes and fluctuations in psychosocial and emotional states. Fortunately, advancements in mobile smartwatch and smartphone technologies now can facilitate frequent and real-time assessments of subjective constructs (e.g., stress, pain) in individuals' daily lives. The first generation of these intensive longitudinal data (ILD) studies involved temporally-dense self-report assessments (e.g., every few hours) across limited time spans (e.g., 7-14 days). However, this approach does not tell us how within-subject processes themselves evolve or change across longer time periods such as months or years, nor does it help link momentary changes to processes that ebb and fold at slower time scales. For example, does the strength of the association between momentary stress levels and subsequent smoking change across the course of an intervention? This symposium will showcase how the next generation of ILD studies are implementing innovative methods to assess intensive subjective data across longer timescales. Three studies from NIH's Intensive Longitudinal Health Behavior Network (ILHBN) will be presented that are each capturing and modeling ILD nested within long-term epidemiological and intervention studies lasting months to years. The first presentation will describe how the TIME (Temporal Influences on Movement and Exercise) Study is implementing four types of Ecological Momentary Assessment (EMA): microinteraction-EMA, burst-EMA, daily diary-EMA, and context sensitive-EMA approaches to assess micro-temporal changes in psychosocial factors contributing the adoption and maintenance of physical activity, limited sitting, and sufficient sleep across one year in young adults. The second presentation will discuss how HeartSteps, a year-long physical activity Just-in-Time-Adaptive Intervention (JITAI) for adults with histories of cardiovascular disease and/or obesity, is combining daily, weekly, and intra-day self-report measurements to gather high-granularity data while minimizing participant burden. The third presentation will share how the MARS (Mobile Assistance for Regulating Smoking) study is using intensive longitudinal self-reported assessments from five studies of smokers attempting to quit to investigate how the temporal dynamics of psychosocial factors can detect states of vulnerability to a lapse and states of receptivity to engaging in self-regulatory activities. Collectively, these presentations will demonstrate how innovative approaches to capturing ILD across long-term studies, when combined with state-of-the-art modeling techniques, can yield critical insights into the prediction and modeling of health behaviors that will lead to innovations in health behavior theories and theory-based interventions.

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INNOVATIVE ECOLOGICAL MOMENTARY ASSESSMENT STRATEGIES TO CAPTURE MICRO-TEMPORAL PROCESSES UNDERLYING LONG-TERM CHANGES IN PHYSICAL ACTIVITY, SEDENTARY BEHAVIOR, AND SLEEP

Genevieve F. Dunton, PhD, MPH¹, Shirlene D. Wang, BA¹, Aditya Ponnada, B. Des², Rebecca Campo, PhD³, Sy-Miin Chow, PhD⁴, Stephen Intille, PhD²¹University of Southern California, Los Angeles, CA; ²Northeastern University, Boston, MA; ³NHLBI; ⁴Pennsylvania State University

Engaging in sufficient levels of physical activity and sleep, and limiting sitting time are important contributors to the prevention of weight gain. Interventions typically focus on the adoption of these behaviors. Yet, success at maintaining behaviors is low. Sustaining these behaviors over time may be challenging due to daily and within-daily fluctuations in how people feel, who they interact with, and obstacles they encounter. Thus, factors influencing the maintenance of health behaviors may become more apparent when assessed on a *micro-timescale* (i.e., across minutes, hours, or days). Part of NIH's Intensive Longitudinal Health Behavior Network (ILHBN), the Temporal Influences on Movement and Exercise (TIME) Study, uses real-time mobile technologies to collect intensive longitudinal data to examine the processes underlying the maintenance of physical activity, low sedentary time, and sufficient sleep duration in ethnically-diverse, emerging adults (ages 18-24). The TIME Study nests Ecological Momentary Assessment (EMA) within a 12-month longitudinal epidemiological design to provide insight into how psychological and health behavior variables change across micro- (e.g., minutes/hours), meso- (e.g., days/weeks), and macro- (e.g., months/years) timescales. Through self-report surveys delivered on smartphones and smartwatches, EMA captures real-time information on affective states, physical feeling states, self-control, attention, intentions, goal-setting, and tracking. Several innovative strategies are used in order to encourage participant engagement and limit burden. First, smartphone-based EMA occurs in twice-monthly "bursts" with 1-2 minute surveys delivered hourly across four days. Second, smartwatch-based one-item "microinteraction-EMA" occurs multiple times per hour during non-burst periods. Third, a smartphone-based "daily diary" EMA survey is prompted near the end of each day. Fourth, sensor-informed "context-sensitive" EMA will prompt surveys when activity behaviors and geographical locations are detected by built-in phone sensors. This presentation will discuss the challenges and trade-offs in designing this study and the technology to collect high-volume self-report data across a 12-month period. EMA prompt compliance data will be compared across the different types of sampling approaches. Strategies to combine the various forms of EMA data in joint analyses will be discussed. Data from this project will be used to examine how changes in within-subject means (i.e., usual levels), variances (i.e., fluctuations), and covariances (i.e., associations) for time-varying psychological and health behavior variables across micro-, meso-, and macro-timescales contribute to long-term health behavior change. Findings will contribute to building more predictive models and efficacious interventions for health behavior maintenance.

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8:00 AM-9:15 AM

NOVEL USE OF MHEALTH DATA TO IDENTIFY STATES OF VULNERABILITY AND RECEPTIVITY TO JITAIS

Inbal Nahum-Shani, PhD¹, Alexander Moreno, MS², Zhenke Wu, PhD³, Jamie Yap, MS³, Cho Lam, PhD⁴, James Rehg, PhD⁵, Susan Murphy, Ph.D.⁵, Santosh Kumar, PhD⁶, David Wetter, PhD⁷

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Smoking cessation decreases morbidity and mortality and is a cornerstone of cancer prevention. The ability to impact current and future vulnerability (e.g., high risk for a lapse) in real-time via engagement in self-regulatory activities (e.g., behavioral substitution, mindful attention) is considered an important pathway to quitting success. However, poor engagement represents a major barrier to maximizing the impact of self-regulatory activities. Hence, enhancing real-time, real-world engagement in evidence-based self-regulatory activities has the potential to improve the effectiveness of smoking cessation interventions. Just-In-Time Adaptive Interventions (JITAI) delivered via mobile devices have been developed for preventing and treating addictions. JITAI adapt over time to an individual's changing status and are optimized to provide appropriate intervention strategies based on real time, real world context. Organizing frameworks on JITAI emphasize minimizing disruptions to the daily lives and routines of the individual, by tailoring strategies not only to vulnerability, but also to receptivity (i.e., an individual's ability and willingness to utilize a particular intervention). Although both vulnerability and receptivity are considered latent states that are dynamically and constantly changing based on the constellation and temporal dynamics of emotions, context, and other factors, no attempt has been made to systematically investigate the nature of these states, as well as how knowledge of these states can be used to optimize real-time engagement in self-regulatory activities. The MARS (Mobile Assistance for Regulating Smoking) study focuses on closing this gap by applying innovative computational approaches to one of the most extensive and racially/ethnically diverse collection of real time, real world data on smoking cessation. The data includes intensive longitudinal self-reported and sensor-based assessments from five studies (three completed and two ongoing) of ~1,500 smokers attempting to quit. The goal is to use these data to investigate whether and how the temporal dynamics and interactions of emotions, self-regulatory capacity (SRC), context, and other factors can detect states of vulnerability to a lapse and states of receptivity to engaging in self-regulatory activities. We will discuss challenges and opportunities relating to the curation, integration and modeling of these intensive longitudinal data. We will also discuss the planning of a Micro-Randomized Trial (MRT) designed to investigate how knowledge of states of vulnerability and opportunity gained from the analysis of existing data can be used to optimize real-time engagement in self-regulatory activities.

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8:00 AM-9:15 AM

ADVANCING NEW APPROACHES TO ECOLOGICAL MOMENTARY ASSESSMENT TO ENABLE MODELING OF GRANULAR DYNAMICS ON PHYSICAL ACTIVITY

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Over the last two decades, a key tool for studying the relationships between health behaviors and psychosocial and contextual variables that influence them has been ecological momentary assessment (EMA). In traditional EMA studies, participants are paid or receive goods or services for a few days to several weeks in exchange for participation in intensive data-collection protocols that require frequent responses to EMA each day and other requests for data. With the emergence of mobile technology and just-in-time adaptive interventions (JITAI), researchers are increasingly focusing on questions of how health behaviors—and factors that influence them—evolve over time, and the dynamics of these processes over different time scales. Studying such questions requires long-term studies for which traditional EMA protocols are poorly suited. The traditional EMA approach is not sustainable financially in long-term studies, and participants typically are unwilling to participate for more than a few days/weeks due to high burden. Consequently, understanding fine-grained dynamics of health behaviors over time requires not just new modeling approaches but new assessment approaches as well.

In this talk, we will discuss the approach we have taken to gather psychosocial data in order to model granular dynamics of influences on physical activity. Our work was done in the context of the development of HeartSteps, a physical activity JITAI that is currently deployed in a year-long study with adults with histories of cardiovascular disease and/or obesity. We will discuss how we are combining daily, weekly, and intra-day self-report measurements to gather data that enables modeling at a high level of granularity while minimizing participant burden, as well as how we are attempting to use sensor data as passively collected indicators of psychosocial constructs we are assessing in the study. We will describe decisions about what to measure, when to measure, how frequently to measure, as well as the tradeoffs of these decisions. Throughout, our assessment needs were in conversation with—and sometimes in conflict with—modeling needs, as well as with the need to maintain the usability of the intervention and keep participant burden to a minimum. Key aspects of our assessment strategy involve judicious selection of constructs to assess daily and weekly, use of EMA bursts to understand intraday variation of most important constructs, ongoing checks on the usefulness of the constructs we are assessing for predicting physical activity, and leveraging passively collected data to build detectors and predictors of psychosocial constructs that are repeatedly re-grounded via self-report.

Symposium 10

8:00 AM-9:15 AM

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8:00 AM-9:15 AM

DEVELOPING DIGITAL CIGARETTE SMOKING CESSATION INTERVENTIONS FOR HIGH RISK POPULATIONS: CROSS CUTTING METHODS TO CLOSE THE GAP

Megan Kelly, Ph.D.¹, Diana M. Kwon, BA², Jonathan Bricker, PhD³, Roger Vilardaga, PhD⁴, Judith J. Prochaska, PhD, MPH⁵

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The cigarette smoking rate among US adults has reached an all-time low of 14 percent. However, this great progress has not equally benefited everyone—especially those who are the most vulnerable. For example, 32 to 88 percent of people with serious mental illness are current smokers and consume 40 percent of all cigarettes in the US. Fifteen to fifty-four percent of cancer patients are current smokers at the time of their diagnosis and at least half of them will remain smokers following diagnosis. And Black smokers are half as likely to quit smoking than White smokers. These populations' smoking trends provide prominent illustrations of the tremendous need to develop smoking cessation interventions for high risk populations of smokers, with the overarching goals of reducing disparities and making further progress in reducing the overall US adult smoking rate.

Digital interventions (e.g., websites, smartphone apps) are a low-cost, accessible, personalized, and high reach method that have the potential to reduce these disparities in smoking. Website access or smartphone ownership is high, ranging from 60% to 90% depending on the population. There are now over 12 million US adult smokers each year using websites for smoking cessation, and over 3 million adults using smoking cessation apps.

However, a major barrier to progress in digital interventions for high risk populations is the lack of early phase research to shape their development. Early research ensures that interventions are tailored to the user, acceptable to them, engaging, impact hypothesized mechanisms of action, and show preliminary signs of effectiveness. The goal of this symposium is to show cross-cutting methods of early phase intervention development.

Methods: will range from focus groups and secondary analyses of general population cessation trials for the goal of planning a digital intervention to showing mechanisms of action and preliminary effectiveness of pilot randomized trials for interventions specifically designed for certain high risk populations of smokers. Accordingly, Dr. Kelly will first present focus group results for planning a website for Veterans smokers with mental disorders. Ms. Kwon will then present secondary data analyses on mechanisms of action and cessation among Black smokers in a general population web-delivered intervention. Dr. Bricker will present pilot RCT results on acceptability and preliminary effectiveness of a cessation app for cancer patients who smoke. Dr. Vilardaga will present engagement results for a cessation app designed for smokers with serious mental illness. Dr. Prochaska will discuss the presentations in terms of their value and utility for design research on digital interventions to address smoking disparities for high risk populations.

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ADAPTING WEB-BASED TOBACCO CESSATION TREATMENTS FOR VETERANS WITH MENTAL HEALTH DISORDERS: DESIGN CONSIDERATIONS

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Smoking is the leading preventable cause of death and disability for Veterans with mental health disorders. Veterans with mental health disorders have high rates of smoking (32-68% vs. 15% in the general population) and low lifetime quit rates (17-33% vs. 43% in the general population). One promising treatment for reducing tobacco use among Veterans with mental health disorders is Acceptance and Commitment Therapy (ACT). Several studies show that web-based ACT smoking cessation interventions are efficacious. However, these interventions have not been tailored for use by Veterans (e.g., addressing the Veteran culture that often embraces smoking) or modified for individuals with a broad array of mental health disorders. To tailor a web-based ACT tobacco cessation intervention (WebQuit Plus) for Veterans with mental health disorders (Vet WebQuit), we conducted four focus groups with Veterans with mental health disorders ($n = 20$; $M_{age} = 51.7$, $SD_{age} = 11.2$; 16 men, 4 women, 65% were non-Hispanic/white) to identify useful adaptations for this intervention. We utilized a user-centered design process to understand Veterans' needs and preferences for a web-based tobacco cessation intervention for Veterans with mental health disorders. Veterans suggested avoiding military images that were combat-related and aversive (e.g., images of fighter planes, paratroopers). They preferred images of people engaged in physical activities and images of people with loved ones. They reported a preference for images of the American flag to represent the constructs of freedom and commitment. Veterans discussed their discomfort with self-compassion exercises and suggested replacing this content with more concrete behavioral coping strategies for smoking cravings and smoking lapses/relapses. They also discussed their positive reactions to mindfulness exercises related to thoughts and emotions (e.g., mindful acceptance of anxiety exercise). Results of the focus groups also demonstrated the importance of using gender neutral names in user quit stories and avoiding particular names that have negative connotations in military culture. This feedback will be used to develop Vet WebQuit and we will assess the acceptability of the modified intervention in future usability testing. Overall, results from this project will help identify important elements to consider in adapting web-based interventions, particularly tobacco cessation interventions, for Veterans with mental health disorders.

2

8:00 AM-9:15 AM

HOW WELL DO BLACK SMOKERS RESPOND TO WEB-BASED SMOKING CESSATION INTERVENTIONS?: CESSATION RATES AND MECHANISMS OF ACTION

Diana M. Kwon, BA¹, Kristin E. Mull, MS², Jonathan Bricker, PhD³¹Fred Hutchinson Cancer Research Center, University of Washington, Seattle, WA; ²Fred Hutchinson Cancer Research Center, Seattle, WA; ³Fred Hutchinson Cancer Research Center/University of Washington, Seattle, WA

Background: The smoking rate for Black adults in the U.S. remains high at 15%. Furthermore, even though Black smokers want and try to quit more than White smokers, they still are significantly less likely to quit and more likely to die from a smoking-related disease. A critical barrier to smoking cessation for Black adult smokers is access to low-cost and effective smoking cessation treatment. Self-help web-delivered cessation interventions could overcome this major barrier to care. To date, no published studies have reported on the effectiveness or mechanisms of action of websites for smoking cessation among Black adult smokers. Thus, the purpose of this study was to compare Black adult smokers, versus White adult smokers, on: (1) cessation rates and (2) mechanisms of action for two web-delivered smoking cessation interventions in a large RCT.

Methods: A secondary analysis of a large RCT (N=2637) comparing two web-delivered interventions for smoking cessation: Acceptance and Commitment Therapy (ACT) vs. NCI's Smokefree.gov. Both websites were designed for a general population of smokers. Black adult smokers (n=281) were compared with White adults smokers (n=1914) on the following: (1) self-reported 30-day point prevalence abstinence at the 12-month follow-up (88% retention) and (2) mechanisms of action defined as engagement (i.e., number of logins, number of unique days logged in) and acceptance of physical cravings to smoke as measured in the first 3 months post-randomization.

Results: In the ACT arm, Black participants had 1.71 times higher odds of 12-month abstinence as compared to White participants (36% vs. 21%; OR=1.71; CI: 1.12, 2.62; p=.013). By contrast, in the Smokefree.gov arm, there was no difference in quit rates between Black and White smokers (27% vs. 25%; OR=.97; CI: 0.62, 1.48; p=.875). Regarding mechanisms of action, number of logins (p=.020) and number of unique days logged in (p=.021) both partially mediated the difference in cessation rates between Black and White smokers; acceptance of physical cravings did not mediate the difference in cessation rates (p=.075).

Conclusions: Web-delivered ACT for smoking cessation appears to be more effective for Black smokers than White smokers. This result may be explained by their level of engagement with the intervention. Development and testing of a web-delivered ACT intervention specifically tailored to Black smokers is now needed.

3

8:00 AM-9:15 AM

DEVELOPING A SMARTPHONE APP FOR CANCER PATIENT SMOKING CESSATION: PILOT RCT RESULTS ON ACCEPTABILITY AND EFFECTIVENESS

Jonathan Bricker, PhD¹, Noreen L. Watson, PhD², Jaimee L. Heffner, PhD², Brie Sullivan, MS³, Kristin E. Mull, MS², Jamie Ostroff, PhD⁴¹Fred Hutchinson Cancer Research Center/University of Washington, Seattle, WA; ²Fred Hutchinson Cancer Research Center, Seattle, WA; ³Fred Hutchinson Cancer Research Center; ⁴Memorial Sloan Kettering Cancer Center, New York, NY

Background: Persistent smoking after a cancer diagnosis predicts poor outcomes including decreased treatment effectiveness, increased risk of disease recurrence and second primary cancers, and worse survival rates. Unfortunately, 50-64% of smokers with cancer continue to smoke after their diagnosis. Limited access to effective tobacco cessation interventions is widely recognized as a key barrier for promoting cessation in the context of cancer care. Smartphone applications ("apps") can address this problem by providing a highly accessible, low-cost smoking cessation intervention tailored to patients with a recent cancer diagnosis.

Objective: Determine the participant acceptability and potential effectiveness of a smartphone app for smoking cessation among cancer patients.

Methods: We used an agile, user-centered design framework to develop a smartphone app (called "Quit2Heal"), specifically designed to help cancer patients stop smoking by providing skills training and stories from cancer survivors that focus on coping with internalized shame, cancer stigma, depression, and anxiety as core triggers of smoking. Quit2Heal was compared with NCI's QuitGuide, a widely used stop smoking app, in a pilot randomized trial with a 2-month follow-up period. Participants were 59 adult smokers diagnosed with cancer within the past 12 months recruited through 2 cancer center networks and social media over a 12-month period. Participants were 75% female, 78% white. The most common types of primary cancers were lung (36%) and breast (17%). The 2-month follow-up survey retention rate was 92% (54/59) and did not differ by study arm (p=.15).

Results: Compared to QuitGuide participants, Quit2Heal participants reported being more satisfied with their assigned app overall (90% vs. 65%; p=.047), found their app's overall approach for quitting a good fit (86% vs. 62%; p=.043), and opened their app descriptively more times [M = 10.0 (SD = 14.40) vs. 6.1 (SD = 5.3); p=.332]. The self-reported 30-day point prevalence quit rate at the 2-month follow-up was 20% for Quit2Heal vs. 7% for QuitGuide (OR=5.16; 95% CI: 0.71, 37.29; p=.104). Quit2Heal participants also showed descriptively greater improvement in internalized shame, cancer stigma, depression and anxiety.

Conclusion: In a pilot trial with a high short-term retention rate, Quit2Heal had promising acceptability and effectiveness for helping cancer patients stop smoking. Testing in a full scale RCT is now needed.

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8:00 AM-9:15 AM

DOSE-RESPONSE EFFECTS OF A NOVEL SMOKING CESSATION APP DEVELOPED FOR PATIENTS WITH TOBACCO USE DISORDER AND SERIOUS MENTAL ILLNESS

Roger Vilardaga, PhD¹¹Duke University, Durham, NC

Background: Examining dose-response effects with smoking cessation apps is key to understanding the mechanisms of action of these digital technologies.

Methods: Learn to Quit (LTQ) is a theory-based smoking cessation app that contains 28 learning and skills modules designed and adapted for individuals with serious mental illness (SMI). This app showed promising preliminary efficacy in a pilot randomized controlled trial among 62 patients with tobacco use disorder and SMI. Using app background analytics, we measured engagement with LTQ and its comparator -- QuitGuide, a standard of care smoking cessation app -- by collecting number of daily interactions with each technology. Smoking outcomes included reductions in number of cigarettes per day (CPD) from baseline to week 16.

Results: Background: analytics of the LTQ app measured a total of 27,955 total interactions (vs. 5,956 for QuitGuide). LTQ users had a smoking reduction of 10.5 CPD (vs 5.6 for QuitGuide). Both visual inspection and regression analysis indicated that participants with large reductions in CPD at trial endpoint (> 5 CPD) displayed consistently higher levels of engagement with the Learn to Quit app throughout the 4-months clinical trial compared to participants who had small reductions (5 or less CPD; $p < 0.001$; R Square = 0.50). This pattern was not replicated in QuitGuide.

Conclusions: LTQ appears to more effectively engage patients with SMI than QuitGuide, which in turn is associated with larger reductions in CPD at trial endpoint. This dose-response analysis suggests that LTQ was effectively designed to engage its target audience.

Symposium 11

8:00 AM-9:15 AM

REACH, ADOPTION, AND IMPLEMENTATION IN PHYSICAL ACTIVITY INTERVENTIONS FOR UNDERSERVED CANCER SURVIVORS

Scherezade K. Mama, DrPH¹, Yue Liao, MPH, PhD², Shawna Doerksen, PhD³, Rachel C. Shelton, ScD, MPH⁴

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Nearly 2 million Americans will be diagnosed with cancer in 2019, and the number of cancer survivors is expected to rise to over 20 million by 2026. Engaging in physical activity post-cancer diagnosis is associated with reduced risk of cancer-specific and all-cause mortality. Despite the overwhelming evidence supporting physical activity post-cancer diagnosis, the vast majority of cancer patients and survivors are insufficiently active and at greater risk of cancer recurrence and developing comorbidities. Improved implementation of exercise within cancer care and during survivorship has been shown to reduce adverse treatment effects. However, few studies have explored supportive care across the cancer continuum through an implementation lens. The goals of this symposium are to explore the reach, adoption, implementation and maintenance of supportive care interventions during and post-cancer treatment in diverse, medically underserved cancer survivors. First, we will describe determinants of physical activity in rural cancer survivors. Next, we will identify the characteristics of cancer survivors that predicted class attendance for a community-based, 12-week physical activity intervention. Finally, we will examine techniques to effectively recruit metastatic breast cancer patients to a digitally-delivered supportive care intervention that delivers guidelines-based symptom management, including physical activity. The symposium will conclude with a moderated discussion on implementation science and exercise across the cancer continuum.

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8:00 AM-9:15 AM

USING A COMMUNITY-ENGAGED APPROACH TO REACH UNDERSERVED POPULATIONS AND DETERMINANTS OF PHYSICAL ACTIVITY AMONG RURAL CANCER SURVIVORS

Scherezade K. Mama, DrPH¹, Nishat Bhuiyan, MS², Kathryn Schmitz, PhD, MPH, FACS, FTOS³

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Rural cancer survivors are more likely to be physically inactive and less likely to do leisure-time physical activity than cancer survivors residing in urban areas with greater access to resources for engaging in healthy behaviors. Yet, few physical activity interventions reach rural cancer survivors or include representative samples of rural cancer survivors. The Partnering to Prevent and Control Cancer (PPCC) study used a community-engaged approach to understand determinants of physical activity in rural, non-metropolitan cancer survivors. An academic-community partnership was used to recruit cancer survivors residing in rural communities to complete questionnaires assessing leisure-time physical activity (LTPA) and sociodemographic determinants, including gender, age, race/ethnicity, marital status, education, income, employment status, and weight status. LTPA was assessed using the Godin Leisure-Time Exercise Questionnaire, and participants were categorized as insufficiently active/sedentary, moderately active, or active. Chi-square tests were used to explore differences in LTPA by sociodemographic characteristics, and multinomial logistic regression was used to explore characteristics of moderately active and active rural cancer survivors compared to insufficiently active/sedentary participants. Through the PPCC partnership, 263 cancer survivors enrolled in the study, representing 18 counties and 84 cities in central Pennsylvania. The two most common types of cancer reported were breast (22.2%) and prostate (21.8%) cancers, and most (89.9%) cancer survivors were at least 12 weeks post-treatment. Participants were mostly women (59.7%), 55-74 years old (60.7%), married (78.6%), and were affected by obesity (39.9%). Over half (50.6%) earned less than a bachelor degree, 20.0% reported an annual household income < \$40,000, and 62.6% were not currently employed. More cancer survivors who were women, 55+ years old, married, overweight or obesity, earned less than a bachelor degree, and reported an annual household income < \$80,000 were categorized as insufficiently active/sedentary ($ps < .05$). Compared to those who were insufficiently active/sedentary, participants who reported being active were more likely to be ≥ 12 weeks post-treatment (OR=1.8), be normal weight (OR=5.261), and have earned a bachelor degree or more (OR=1.7). Findings contribute to our understanding of how to effectively use a community-engaged approach to reach rural cancer survivors. Additionally, we identified sociodemographic characteristics of rural cancer survivors who are most likely to engage in LTPA and who are at greatest risk for not meeting LTPA recommendations. Determinants identified through this study will be used to tailor recruitment and implementation of an evidence-based physical activity intervention for rural cancer survivors.

2

8:00 AM-9:15 AM

PREDICTORS OF CLASS ATTENDANCE OF A COMMUNITY-BASED EXERCISE PROGRAM FOR CANCER SURVIVORS

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Background: Regular exercise and physical activity provides many physical and mental health benefits to cancer survivors. However, many cancer survivors are not active enough to achieve these health-promoting effects. Increasing efforts have been made to develop and implement community-based exercise programs for cancer survivors. Yet, few studies examined cancer survivors' characteristics that are associated with the participation in the program.

Methods: The Active Living After Cancer (ALAC) is an ongoing community-based exercise program. It is consisted of 12 weekly group sessions that include training in cognitive and behavioral skills for behavior change, brief practice of moderate-intensity physical activity, and a didactic or discussion session covering a survivorship related topics. The ALAC program works with local community partners to reach cancer survivors. Community partners also provide the health educators for program delivery and locations for conducting the group session. This study analyzed data from participants in the first two years of the ALAC program. Participants reported their demographic and cancer-related information, and answered questions regarding quality of life at baseline. They also reported their physical activity level using the International Physical Activity Questionnaire-Short Form (IPAQ-SF) before and after the program. Linear regression was used to test the association between participants' characteristics and class attendance.

Results: Participants (n=250) averaged 60 years old (SD=10.7), were 95% female, 81% overweight/obese, 55% Hispanic, 28% black, 40% with household income < \$25,001, and 75% with less than a college degree. Majority of the participants had breast cancer as the primary diagnosis (75.8%), followed by colorectal cancer (5.7%) and ovarian cancer (4.1%). Thirty-five percent participants had early stage cancer. Participants on average attended 9 classes (SD=2.4). Class attendance was positively associated with the increase in total weekly activity minutes at the end of the program ($\beta=46.21$, $p=.004$). Older participants attended more classes ($\beta=.03$, $p=.047$). Normal weight participants attended more classes compared to obese participants ($\beta=.99$, $p=.016$). Participants who rated lower on satisfaction with social roles and higher on mental health at baseline attended more classes ($ps < .05$). Class attendance did not differ by gender, racial groups, household income, education level, cancer type (breast vs. all others), cancer stage, or physical health at baseline.

Conclusion: Preliminary results from the ALAC program suggest that a diverse background of cancer survivors participated in this community-based exercise program. Group-based exercise program could be more attractive to cancer survivors who seek more social interactions.

3

8:00 AM-9:15 AM

REACH, ADOPTION, AND IMPLEMENTATION OF 'NURSE AMIE 2.0': A TABLET-BASED SUPPORTIVE CARE INTERVENTION FOR WOMEN WITH METASTATIC BREAST CANCER

Shawna Doerksen, PhD¹, Erica Schleicher, MS², William A. Calo, PhD, JD, MPH³, Kathryn Schmitz, PhD, MPH, FACS, FTOS³¹Penn State College of Medicine, State College, PA; ²Penn State College of Medicine; ³Penn State College of Medicine, Hershey, PA

Background: Current life expectancies for women with metastatic breast cancer (MBC) are longer now compared with 15 years ago. However, to gain these extended life expectancies, women must undergo continuous treatment, and face significant adverse cancer treatment-related symptoms and decreasing quality of life (QOL). The time spent at clinic appointments is focused on treatment versus symptoms, and traditional methods of addressing QOL require patients to attend even more in-person appointments. Women with MBC residing in medically underserved areas where in-person efforts are nearly impossible face additional barriers to care. Technology-based programs may be a suitable option to improve the reach and adoption of symptom management interventions.

Methods: We developed a tablet-based supportive care program for women with MBC. Nurse AMIE (Addressing Metastatic Individuals Everyday) is an innovative program that has the potential to reach a large proportion of women, including those in medically underserved areas. Participants are given the tablet program and are contacted by a patient navigator throughout the study. In this symposium, we will discuss reach, adoption, and implementation of Nurse AMIE in a pilot study.

Results: We were able to recruit and retain 21 women ($M_{age} = 60.86$ yrs, average 10.52 years since initial breast cancer diagnosis) into our pilot study. This equates to 80% reach, as only 20% of women who we approached declined to participate. Interestingly, all participants live in medically underserved areas. Adoption was high, as evident by the fact that participants interacted with Nurse AMIE 67.12% of days (of the women who had used Nurse AMIE for at least a month at the time of this report). Additionally, implementation of the intervention was excellent as the patient navigator who delivered the program met all weekly calls and intervention activities with nearly 100% fidelity.

Conclusion: Data suggest that women with MBC in medically underserved areas, can be effectively reached and recruited for a technology-based supportive care program, and adoption rates are high. Additionally, Nurse AMIE was implemented successfully at the organization level. These types of mHealth interventions for MBC patients may be a good solution for symptom management.

Symposium 12

8:00 AM-9:15 AM

MISINFORMATION AND MISPERCEPTIONS ABOUT TOBACCO PRODUCTS: FINDING SOLUTIONS FOR COUNTERING TOBACCO INDUSTRY TACTICS

Linda Cameron, Ph.D.¹, Pamela M. Ling, MD, MPH², Marc T. Kiviniemi, PhD CPH³, Joseph N. Cappella, PhD⁴, Geoffrey T. Fong, Ph.D.⁵¹University of California, Merced, Merced, CA; ²UCSF Center for Tobacco Control Research and Education, San Francisco, CA; ³University of Kentucky, Lexington, KY; ⁴Univ of Pennsylvania, Philadelphia, PA; ⁵University of Waterloo, Waterloo, ON, Canada

The spread of misinformation and misperceptions about cigarettes, electronic cigarettes, and other tobacco products through social and other media poses significant threats to tobacco control efforts and public health. This symposium will examine the problem of tobacco misinformation and misperceptions and consider research directions for developing innovative solutions to this growing challenge to tobacco control worldwide. The symposium will present theory and research on how people respond to misinformation about tobacco products, how to inoculate people from tobacco misinformation and misperceptions, and how to impede the spread of misinformation and misperceptions by countering the strategies of the tobacco industry. The speakers will consider these issues from multiple disciplinary perspectives including public health, medicine, social and health psychology, and communications. First, Pamela Ling will present research examining previously secret documents from the tobacco industry that reveals their strategies for fueling misperceptions of tobacco and nicotine in the general public and generating misinformation about tobacco products within the scientific community. She will discuss how these strategies have evolved over past decades and how they are currently implemented to normalize the use of nicotine and promote new products. Marc Kiviniemi will then present theory and research on the powerful role of affective processes in the spread of misinformation and misperceptions of tobacco products. He will describe how tobacco industry messaging directly targets affective processes to create misperceptions of products and how positive affective associations shape misperceptions and promote product use over and above the influence of cognitive or “fact-based” misinformation. Next, Joseph Cappella will describe multiple approaches to creating communications that can counter misinformation about tobacco products and their emotional and motivational effects. He will present research demonstrating the effectiveness of these strategies and describe contexts in which these approaches are best applied. Finally, Geoff Fong will discuss implications of the body of research for tobacco regulations and communications to counter misinformation and misperceptions propagated by the tobacco industry while providing an international perspective based on evidence from the International Tobacco Control Policy Evaluation Project. Taken together, this symposium highlights the approaches of different disciplines and how future, multidisciplinary research can yield further innovative solutions for counteracting misinformation and misperceptions.

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8:00 AM-9:15 AM

TOBACCO INDUSTRY EFFORTS TO PROPAGATE MISINFORMATION AND MISPERCEPTIONS

Pamela M. Ling, MD, MPH¹¹UCSF Center for Tobacco Control Research and Education, San Francisco, CA

When faced with the evidence of the health harms of smoking, tobacco companies launched efforts to change perceptions of smoking and nicotine. This presentation will review evidence from analyses of previously secret tobacco industry documents describing tobacco industry strategies to generate misinformation about tobacco in the scientific community and misperceptions of tobacco and nicotine for the public. Tobacco companies used their own scientists and partnerships with academic institutions to generate science suggesting nicotine has benefits and to garner public health endorsement of efforts to develop “safer” cigarettes through product modification. Tobacco companies supported publications in scientific journals and scientific symposia on these topics, and some scientists solicited industry support to generate studies beneficial to the industry. The science was conducted with the public in mind, and experiments were designed (e.g., driving, piloting airplanes) that would readily translate into stories for the press. Scientific efforts were accompanied by public relations campaigns to liken nicotine to caffeine and differentiate it from addictive drugs. Complementary to the efforts to influence the scientific community, tobacco advertising strategies were used to distract and reassure consumers with health concerns. This included images that evoked positive emotions, images of scientific advancement, cleanliness, financial and social success, and positive smoking role models. Some product characteristics (e.g. reduced carcinogens, special filters) were promoted that implied safety without scientific evidence of benefit. Over time, tobacco companies changed their strategy from denial of the harms and addiction of smoking to acknowledge these dangers in order to support the promotion of new tobacco products (e.g. heated tobacco products) and electronic nicotine delivery devices. Strategies similar to past efforts are being deployed to normalize the use of nicotine and promote new tobacco products. Future implications for tobacco regulation, communication and other substances such as legalized cannabis will be discussed.

2

8:00 AM-9:15 AM

MOVING BEYOND “THE FACTS”: ADDRESSING AFFECTIVE FACTORS IN UNDERSTANDING AND RESPONDING TO TOBACCO INDUSTRY MISINFORMATION

Marc T. Kiviniemi, PhD CPH¹¹University of Kentucky, Lexington, KY

Misinformation presented by the tobacco industry about the risks posted by tobacco product consumption has a long history. There is a similarly long history of public health efforts to correct misperceptions caused by such misinformation and to attenuate its impact on tobacco use. Historically, both research efforts to understand misinformation and intervention efforts to address it have taken a predominantly “fact based”/cognitive lens, defining misinformation as being communication that counters accepted scientific fact about smoking harms. However, an additional core feature of nearly all tobacco industry messaging is a focus on affective associations with tobacco use, creating positive feelings associated with the act. In parallel, much of behavior is guided by affective cues over and above cognitively-based, factual constructs. This presentation will focus on a framework for considering how “mis-affecting”-- creating positive emotional associations with a behavior with substantial health risks like tobacco consumption -- shape responses to tobacco industry communications over and above cognitive misinformation. Data relevant to three core ideas will be presented. First, emotional associations with behaviors, including tobacco use behaviors, are a causal influence on behavioral decisions separate and distinct from cognitions. Second, a variety of intervention strategies can change affective associations with behaviors without the need for concomitant changes in cognitions. Third and finally, affective associations can operate to influence behavior even in situations where an individual lacks relevant domain knowledge. Each of these core ideas has direct implications for public health efforts to address and respond to industry misinformation.

3

8:00 AM-9:15 AM

APPROACHES TO CORRECTING MISINFORMATION ABOUT TOBACCO PRODUCTS

Joseph N. Cappella, PhD¹¹Univ of Pennsylvania, Philadelphia, PA

Advertising about tobacco products has produced a long history of misinformation about tobacco and its consequences for consumers. This misinformation calls out for correction through regulatory action and through communication campaigns to counter false and misleading beliefs. This presentation will describe approaches to messaging in service of correcting false beliefs and their emotional residue (belief echoes). The approaches considered include (1) simple correction of the misinformation (education) while avoiding repetition of the falsehood; (2) inoculation of targeted audiences in advance against specific appeals; (3) the use of narrative appeals (and testimonial examples) to reframe the misinformation in an alternative (causal) mental model; (4) value affirmation to motivate action and reduce barriers to receipt of threatening information; (5) emotional appeals to counteract residual affect from misinformation; (6) moral appeals especially ones activating moral outrage by citing self-interested deception. This overview will cite key research studies relevant to tobacco products in which each corrective strategy has been successfully deployed including some recent published and unpublished work from our TCORS projects. In addition to an illustrative study, the conditions under which each approach might be best applied will be discussed. For example, emotional appeals must be explicitly tied to the misinformation being corrected or the utility of emotional invocation will be less relevant to belief correction. Combinations of approaches will also be mentioned to describe when two or more elements can work together to enhance the impact on correction. For example, narrative and inoculation can provide engaging messages that forewarn and forearm young people about the addictive character of ENDS products. Although single no approach to correcting misinformation is fully effective in all contexts, understanding the alternatives and their conditions of application, alone and together, can enhance researchers' and regulators' tool box of interventions.

Symposium 13

8:00 AM-9:15 AM

UNDERSTANDING THE LANDSCAPE OF LONELINESS: FROM CAUSES TO DIGITAL INTERVENTIONS

Danielle Ramo, PhD¹, Lena Bertozzi, n/a², Emma Bruehlman-Senecal, PhD¹, Jana Haritatos, PhD¹, Vicky Rideout, MA³, Susannah R. Fox, BA⁴, Julianne Holt-Lunstad, PhD⁵, Kimberly S. Stevens, Clinical Psychology Doctoral Student⁶, Brock Kirwan, PHD⁵, Benjamin F. Miller, PsyD⁷

¹Hopelab, San Francisco, CA; ²Hopelab, BERKELEY, CA; ³VJR Consulting, San Francisco, CA; ⁴Internet Geologist LLC, Washington, DC; ⁵Brigham Young University, Provo, UT; ⁶UNLV, Henderson, NV; ⁷Well Being Trust, Oakland, CA

Loneliness is a prevalent public health risk among all age groups in the U.S. that is related to mental and physical health challenges including anxiety and depression, poor sleep quality, substance use, susceptibility to illness and self-harming behaviors. Now more than ever there is a need to understand contributors to loneliness, and develop innovative solutions that can act to decrease chronic loneliness and its ill effects. This symposium will present the results of three studies across the population and study design spectrum to inform our understanding of the experience of and solutions for loneliness. The first presentation is an analysis of a nationally-representative survey conducted by Hopelab and the Well Being Trust, highlighting nuanced relationships between loneliness and social media use among adolescents. The second presentation is an fMRI study of the relationship between social integration and activation in brain regions implicated in stress reactivity and regulation within a middle-aged community sample. The final talk is an intervention designed by Hopelab and Grit Digital Health called Nod, that addresses loneliness in college students by providing scaffolded opportunities for social connection. The talk will highlight the formative research to develop Nod, co-development efforts informed by lonely college students and other stakeholders, and share a novel evaluation model that includes the combination of pilot clinical trial and service design research. The discussant will highlight each presentations' contributions to our understanding of loneliness, highlight unique features across the lifespan, and the importance of using innovative strategies to impact loneliness at scale. The symposium will include dedicated time for a question-and-answer session with the panel of presenters.

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1

8:00 AM-9:15 AM

TEEN LONELINESS AND SOCIAL MEDIA USE: RESULTS FROM A NATIONALLY REPRESENTATIVE SURVEY

Lena Bertozzi, n/a¹, Emma Bruehlman-Senecal, PhD², Vicky Rideout, MA³, Susannah R. Fox, BA⁴, Benjamin F. Miller, PsyD⁵, Jana Haritatos, PhD²

¹Hopelab, BERKELEY, CA; ²Hopelab, San Francisco, CA; ³VJR Consulting, San Francisco, CA; ⁴Internet Geologist LLC, Washington, DC; ⁵Well Being Trust, Oakland, CA

Introduction: Generational increases in loneliness have coincided with the saturation of social media among adolescents and young adults; yet the relationship between social media use and loneliness among young people is poorly understood. We analyzed mixed-methods data from a nationally representative survey of "digital natives" to understand linkages between loneliness and features of social media use.

Methods: From February to March 2018, a nationally-representative sample of adolescents age 14 to 22 (N=1337) completed an online survey. Items included patterns of social media use and loneliness using a short 4-item version of the UCLA loneliness questionnaire. Qualitative data included adolescents' own descriptions of their personal experiences with social media and mental health. Correlational analyses were conducted to explore quantitative relationships, and qualitative data were coded for themes.

Results: Nearly half of respondents (48%) reported sometimes or often feeling like "people were around them but not with them", and 51% said they sometimes or often "feel like no one really knows them". Older adolescents ($r = 0.23, p < .001$), LGBTQ+ youth ($r = 0.25, p < .001$), and youth experiencing greater depressive symptoms ($r = 0.56, p < .001$) had higher loneliness scores. Higher loneliness scores were not associated with more frequent social media use. However, higher loneliness scores were associated with more negative experiences on social media, including receiving negative comments on posts ($r = 0.29, p < .001$), feeling like other people are doing better than you ($r = 0.23, p < .001$), being trolled on social media ($r = 0.23, p < .001$), and deleting something you have previously posted ($r = 0.16, p < .001$). Higher loneliness scores were also associated with using social media as a way of avoiding problems ($r = 0.33, p < .001$) and preferring to communicate over social media rather than in person ($r = 0.21, p < .001$). Even so, adolescents with higher loneliness scores felt social media was more important for feeling less alone ($r = 0.22, p < .001$), and qualitatively described positive emotional experiences during social media use.

Conclusion: Although lonely adolescents are having heightened negative experiences on social media, they are still using it to achieve some social connection. This creates opportunity to reach lonely adolescents where they're engaging and provide them with resources and tools to build stronger connections.

2

8:00 AM-9:15 AM

DEVELOPING AND TESTING THE DESIRABILITY OF A DIGITAL TOOL TO ADDRESS GEN Z LONELINESS

Emma Bruehlman-Senecal, PhD¹, Danielle Ramo, PhD¹, Jana Haritatos, PhD¹¹Hopelab, San Francisco, CA

Introduction: Loneliness is a widespread and significant problem on college campuses. Prolonged loneliness in young adulthood is a risk factor for concurrent and future mental health problems, including anxiety, depression, and suicidality, as well as college dropout, making college a critical time for support. Positive psychology and cognitive behavioral interventions show promise for decreasing loneliness, and have the potential to be widely disseminated through technology. This talk describes the development of the mobile-app *Nod*, designed to address loneliness in the transition to college. It focuses on the theoretical framework guiding *Nod*'s development, and the initial feasibility and desirability testing of *Nod*.

Methods: Guided by Hopelab's 'Innovation Framework', we adopted a two-phase approach towards the development and preliminary testing of *Nod*. In phase 1, the 'Discover' phase, we sought to identify potential psychological and behavioral drivers of loneliness among college students by surveying the empirical literature, and conducting in-person and remote qualitative interviews with college students. In the beginning of stage 2, the 'Build/Test' phase, we assessed the initial desirability and feasibility of *Nod*. We drew upon multiple methods, including participant observation, focus groups, interviews, and surveys, with the aim of tailoring positive psychology and CBT interventions to meet the needs and concerns of college students and administrators.

Results: The 'Discover Phase' yielded the following three evidence-based insights that guided the design of *Nod*: 1) encourage a growth-mindset towards friendship 2) provide scaffolded opportunities for social connection 3) help students process social setbacks with compassion. Early stage co-design sessions and field testing with college students enhanced the desirability of app content, and refined our approach towards in-app gamification. Early testing with college administrators confirmed the feasibility of integrating *Nod* into existing student service systems, and yielded insights regarding reducing the burden to doing so.

Conclusion: Preliminary research demonstrates the initial desirability and feasibility of *Nod*, an evidence-based mobile app designed to decrease loneliness among college students. Further testing, including a randomized controlled pilot test, is planned for Fall 2019 to confirm the initial efficacy of *Nod*.

3

8:00 AM-9:15 AM

THE SOCIAL BRAIN: EXPLORING NEURAL CORRELATES OF SOCIAL INTEGRATION

Kimberly S. Stevens, Clinical Psychology Doctoral Student¹, Brock Kirwan, PHD², Julianne Holt-Lunstad, PhD²¹UNLV, Henderson, NV; ²Brigham Young University, Provo, UT

Background: Substantial evidence demonstrates that sociality predicts longevity and aspects of physical, mental, and cognitive health. This may be partially explained by social influences on stress and emotional reactions, which affect disease risk over the lifespan. Less is known about the association between quality/quantity of social networks and functional activation in brain regions implicated in plausible health pathways such as regulatory prefrontal areas and downstream paralimbic areas important for stress reactivity. We hypothesized that adults with more diverse social networks would show greater fMRI BOLD activity in regulatory prefrontal areas (particularly the anterior cingulate; ACC) lesser BOLD activity in downstream paralimbic areas important for stress reactivity (particularly the amygdala), and stronger and more inverse functional coupling between prefrontal and paralimbic areas than adults with less diverse social networks. Given much of social contact is shifting to greater "online" than "in-person" contact, we also explored possible equivalencies.

Methods: In a within-subjects design, healthy middle aged (40-65 yr-old) adult men and women (N=42) were recruited from the community. Neuroimaging data were collected via a structural scan, a multi-source interference task, and an emotional regulation task in an MRI scanner. The Social Network Index (SNI) was used to examine network size and diversity, and parallel items were included to differentiate online social contact.

Results: Regression models showed no significant association between SNI Size or Diversity scores and mean activation in ACC, Left Amygdala, or Right Amygdala during tasks of emotional regulation or stress reactivity. Exploratory analyses including online contact as measured by the SNI were also non-significant. Further, in an exploratory whole-brain analysis, there were no clusters which showed differential activation as a function of social network diversity.

Conclusion: We found no evidence that level of sociality as indexed by the SNI significantly influenced functional activation of examined brain regions during stress. More research is needed (including larger sample sizes, more diverse task sets, and non-stress related pathways) in order to better understand brain regions implicated in the health effects of sociality, and any potential moderating effects of non-proximal (online) social contact.

Symposium 14

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

THE EFFECTS OF TRAUMA EXPOSURE ON WOMEN'S HEALTH: EXAMINATION OF NOVEL PREDICTORS AND INTERVENTIONS

Natalie R. Stevens, PhD¹, Pamela Geller, PhD², Nancy A. Hamilton, PhD³, Autumn Gallegos, PhD⁴¹Rush University Medical Center, Evanston, IL; ²Drexel University, Philadelphia, PA; ³University of Kansas, Lawrence, KS; ⁴University of Rochester Medical Center, Rochester, NY

Exposure to traumatic stress among women is a significant public health concern, given high rates of child abuse, lifetime sexual violence, and exposure to community violence. Consequences of trauma exposure are often chronic, leading to depression, posttraumatic stress disorder, substance abuse, and suicide, and are associated with poorer physical health including a range of gynecologic, sexual, gastrointestinal, sleep, and pain disorders. Thus, understanding the effects of traumatic stress on women's health is an important component of the national women's health research agenda. The 2018 Report on Research on Women's Health (National Institutes of Health; NIH) reported that women now comprise 50% of all research participants in NIH-funded clinical research, and that 39% of these women represent minority groups, marking a significant increase in the representation of women and minorities in clinical research over the last 25 years. NIH's Office of Research on Women's Health (ORWH) calls for an interdisciplinary research focus on personalized prevention, diagnostics, and therapeutics for women, as well as understanding and eliminating health disparities among populations of women defined by demographic factors. We argue that understanding and ameliorating the effects of trauma exposure on the health of women, particularly women from minority groups, is an important avenue for achieving the national scientific agenda articulated by the ORWH. In this symposium, we will focus on a broad range of issues related to trauma exposure and women's health. Topics include 1) results of an ORWH-funded project investigating the impact of community violence exposure on maternal health and racial disparities, 2) research examining the traumatic effects of perinatal loss in a socio-economically and racially diverse group of women, 3) an investigation of the impact of posttrauma nightmares on sleep and stress among sexual assault survivors, 4) and examining the efficacy of a sleep intervention to enhance recovery from intimate partner violence.

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PLACE OF RESIDENCE AND MATERNAL HEALTH DISPARITIES: USING GEOGRAPHIC INFORMATION SYSTEMS (GIS) ANALYSIS TO EXAMINE WHETHER COMMUNITY VIOLENCE EXPOSURE PREDICTS PTSD AND DEPRESSION SYMPTOMS IN URBAN MOTHERS

Natalie R. Stevens, PhD¹, Teresa Lillis, PhD², Linzy Pinkerton, B.A.³¹Rush University Medical Center, Evanston, IL; ²Rush University Medical Center, Chicago, IL; ³Northwestern University Feinberg School of Medicine

Residence in low-resource neighborhoods is associated with higher rates of infant mortality and child abuse/neglect. In urban settings, women of color are more likely to live in low-resource areas, facing greater exposure to violent crime and resultant increased risk of posttraumatic stress disorder (PTSD), compared to residents living in high-resource areas. However, objective data are needed to fully characterize the association between urban violence and health outcomes using objective measures to supplement self-report. In this study we used public records and geographic information system (GIS) analyses to objectively assess violent crime exposure among urban mothers. Participants were drawn from a larger prospective study of PTSD and chronic pain. Female participants (N = 213; age: 18–41 years, M = 30.09, SD = 5.85) with at least one child under 18 years living in the home who completed a baseline assessment of trauma history and PTSD and depression symptoms were included in the analysis. The sample was comprised of mostly low-income (31% living below poverty level) women of color (71% Black/African-American, 24% Hispanic/Latina) with high rates of self-reported trauma history (94% reported at least 1 traumatic event) and exposure to multiple traumas (M = 4.70, SD = 3.16). Addresses and crime coordinates (latitude and longitude) were used for GIS analysis of violent crimes registered in a public database. Non-violent crimes were excluded. Crimes that occurred within a .25 mile radius of the participants' residence within 6 months prior to their baseline assessment were summed to create a single "crime count" variable for each participant. Results identified participants were exposed to an average of 103.96 violent crimes in the past 6 months (SD = 66.11, range 6–329). Crime count was significantly correlated with PTSD symptom severity ($r = .18$, $p < .01$) and depression symptom severity ($r = .22$, $p < .001$), but not self-reported trauma history ($r = -.04$, $p < .05$). Controlling for self-reported trauma history and socio-economic status, crime count significantly predicted both PTSD symptom severity, $F(3, 209) = 12.07$, $p < .05$ and depression symptom severity $F(3, 209) = 7.39$, $p < .001$. Black/African-American mothers were exposed to significantly more violent crimes in the past 6 months (M = 118.61, SD = 65.35) compared to White mothers (M = 67.44, SD = 52.85), $t(211) = -5.44$, $p < .01$, but race did not significantly moderate the relationship between violent crime exposure and PTSD symptom severity, $F(1, 148) = .251$, $p > .05$. Results suggest that exposure to violent crime, based on individualized objective measures, uniquely contributes to maternal PTSD and depression beyond what is captured via self-reported trauma history. Results also suggest that racial disparities in maternal PTSD may, in part, be explained by place of residence and the associated higher exposure to community violence.

2

8:00 AM-9:15 AM

COPING WITH PREGNANCY LOSS: A TRAUMA FOR WOMEN, A TARGET FOR MEDICAL PROVIDERS

Pamela Geller, PhD¹, Victoria Grunberg, M.S.¹

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For the 20% of women in the United States who experience pregnancy loss, the experience can be traumatic. Factors that influence women's trauma experiences remain understudied, especially in minority populations and women with limited access to psychological treatment. The current study gleaned data from a larger investigation examining women's experiences with medical providers when coping with perinatal loss ($N = 825$; Participant age: 18 - 66 years, $M = 31.87$, $SD = 8.69$). To capture a diverse sample that has historically been excluded from pregnancy loss research, data were collected via online survey through social media outlets (e.g., Facebook, Craigslist, YouTube). This innovative method of accessing the target population permitted enrollment of a large proportion of minority women ($N = 391$; 47.40%). Results indicated that 44% ($N = 363$) of women scored in the clinically significant range for PTSD symptoms on the PTSD Checklist (PCL-5; Weathers et al., 2013). Hierarchical regression analysis indicated that when controlling for years since loss and mental health history, women with lower income, less education, and more negative religious coping reported higher levels of PTSD, $F(5, 549) = 41.14$, $p < .001$. When controlling for years since loss, education, income, age, and type of loss, women's report of experiences with medical providers explained a significant proportion of variance in PTSD symptoms, $F(6, 47) = 14.19$, $p < .001$, $R^2 = 13.5\%$. Results identify risk factors for traumatic responses following pregnancy loss; and can inform medical providers of the importance of effective communication and need to support women during this difficult time.

3

8:00 AM-9:15 AM

THE EFFECTS OF POSTTRAUMA NIGHTMARES ON SLEEP QUALITY AND THE STRESS RESPONSE

Nancy A. Hamilton, PhD¹, Westley Youngren, Master's Thesis², Lauren Boddy, Master's Degree¹, Megan Schulte, University student², Brooke Ostrander, Bachelors of Science², Eliza Hemmer, Bachelors of Science²

¹University of Kansas, Lawrence, KS; ²University of Kansas

Posttrauma nightmares (PNs) about sexual assault interfere with sleep and daytime functioning, even years after the initial trauma and are associated with severe psychological sequelae including suicide and substance abuse. In order to gain a better understanding of mechanisms by which these nightmares affect ongoing health, we examined PNs in college-aged female sexual assault (SA) survivors. Data included sleep diaries (6 days/nights: 146 observations) gathered from a sample of 27 women (age $M=20.5$, $SD=3.08$: 59% White, 22% Hispanic, 11% Asian, 7% African American) who reported PNs related to a SA. Participants in this study were recruited from a larger study and from community mental health care providers. Pre-sleep diaries included reports of daytime perceived stress and the presence or absence of a reminiscent-stimuli (REMSTEM; an event that reminded the individual of the SA). Morning diaries included the Pittsburgh Sleep Quality Inventory (PSQI) and reports about nightmares and other dreams. Compared to Non-Nightmare Nights (NNN), Nights on which PNs occurred (PNO) were associated with a shortened Total Sleep Time (TST; $M=72$ fewer minutes; $p < .01$) and longer Sleep Onset Latency (SOL; $NNN=30.3$ min; $PNO=62.4$ min, $p < .01$). Poor sleep quality was associated with having a PN ($p < .05$), but not a bad dream (BD) that did not produce an awakening ($p > .05$). PNs and BDs had differential effects on stress-reactivity that were not related to TST or SOL. Following a night where a PN occurred and an individual experienced a REMSTEM during the day was associated with higher levels of stress at bedtime ($B=2.65$, $p < .05$). In contrast, following a night with a BD, encountering a REMSTEM was associated with lower levels of stress at bedtime. These data suggested that the toxicity of nightmares might be because of their pervasive effect on daytime and nighttime psychological functioning, affecting sleep itself (TST, SOL), perceived sleep quality, and the perceived ability to respond effectively to a "triggering" stimulus.

4

8:00 AM-9:15 AM

QUALITY OF LIFE AND SLEEP OUTCOMES AMONG WOMEN SURVIVORS OF INTERPERSONAL VIOLENCE: RESULTS FROM A RANDOMIZED CLINICAL TRIAL OF COGNITIVE-BEHAVIORAL THERAPY FOR INSOMNIA TO INCREASE EFFICACY OF PTSD TREATMENT

Autumn Gallegos, PhD¹, Kathi L. Heffner, PhD¹, Catherine Cerulli, J.D., Ph.D.², Wilfred Pigeon, PhD³

¹University of Rochester Medical Center, Rochester, NY; ²University of Rochester Medical Center; ³Veteran Affairs, Canada, igauga, NY

Exposure to interpersonal violence (IPV)-related traumas (including violence between family members, intimate partners, acquaintances or strangers, including sexual assault) disproportionately affects women and is associated with deleterious mental and medical health comorbidities, including posttraumatic stress disorder (PTSD), major depressive disorder (MDD), insomnia, and diminished quality of life. In the U.S., nearly 1 in 5 women report sexual violence by any perpetrator and 1 in 3 women have experienced sexual violence, physical violence, or psychological aggression by an intimate partner. In a randomized clinical trial of sequentially-delivered insomnia and trauma-focused PTSD treatment (cognitive behavioral therapy for insomnia [CBTi] and cognitive processing therapy [CPT], respectively) for IPV survivors, we found that the addition of insomnia treatment improved insomnia and depression outcomes, but effects on PTSD were modest and non-significant. In this secondary analysis of trial data, we examined whether the addition of insomnia treatment to PTSD intervention affected IPV survivors' quality of life, and the potential role of two important sleep-related contributors to well-being, slow wave sleep (SWS) and rapid eye movement (REM) sleep. In all, 110 participants were randomized (56 to CBTi + CPT; 54 to Control + CPT) and 61 participants were included in the current analysis (37 in CBTi + CPT; 24 in Control + CPT). Assessments, including the WHO Quality of Life (WHOQOL) scale and overnight sleep measures from polysomnography (REM arousals per hour of REM sleep and total SWS minutes), occurred at baseline (T1), after CBTi/Control (T2), and after CPT (T3). General linear models with repeated measures tested time x group interactions from T1-T3 for WHOQOL, REM sleep arousals, and SWS. A significant effect was found on overall quality of life among CBTi + CPT participants, $F(1.70, 100.55) = 4.05$, $p < .05$. There were no significant differences between groups for REM sleep arousals or SWS. Compared to delivering the trauma treatment without addressing insomnia, the use of CBTi in addition to CPT improved quality of life among survivors of violence.

Symposium 15

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

INNOVATIVE INTERVENTIONS TO IMPROVE HEALTH OUTCOMES AMONG SEXUAL AND GENDER MINORITY YOUTH: FROM CONCEPTUALIZING TO TESTING

Sophia Choukas-Bradley, Ph.D.¹, Cesar G. Escobar-Viera, PhD, MD¹, James Egan, PhD, MPH¹, Erin A. Vogel, PhD², Sabrina Ford, PhD³, Sherry Pagoto, PhD⁴

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Sexual and gender minority (SGM) youth and emerging adults face well-established disparities in a number of mental health and substance use outcomes, many of them related to societal rejection and discrimination. While some digital health and social media health interventions to improve mental health and substance use outcomes exist, very few have been developed with SGM youth in mind. This is a crucial gap because of the unique developmental characteristics and stressors SGM youth face. Interventions that seek to address health disparities among SGM youth should consider these characteristics and stressors. The goal of this symposium is to share the process of conceptualizing, developing, and testing technology-delivered behavioral interventions focused on SGM adolescents and emerging adults. First, Dr. Choukas-Bradley will describe results of two mixed-methods studies focused on mental and behavioral health to provide insights about (a) unique needs of SGM youth with regard to development, identity concerns, and relationships; and (b) optimization of developmentally sensitive social media interventions for this group. Dr. Escobar-Viera will then share the development process and preliminary acceptability results of a social media-delivered intervention to reduce social isolation among rural SGM youth. Next, Dr. Egan will describe feasibility testing results for a web-based game to improve help-seeking behavior and coping among SGM youth. Finally, Dr. Vogel will present 3- and 6-month outcomes of a social media-delivered smoking cessation intervention tailored for SGM emerging adults. Speakers will emphasize the theoretical foundation of the relation between intervention components and expected outcomes. Dr. Sherry Pagoto will integrate the speakers' findings and discuss their implications for the advancement of internet and social media-delivered behavioral interventions and for improving health outcomes among SGM adolescents and emerging adults.

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DEVELOPMENTAL AND INTERPERSONAL CONTEXTS OF SEXUAL AND GENDER MINORITY YOUTH: INSIGHTS FOR INTERVENTION DEVELOPMENT

Sophia Choukas-Bradley, Ph.D.¹, Michael P. Marshal, PhD², Brian Thoma, PhD³, Rachel Salk, PhD³, Tina Goldstein, PhD³, Michele D. Levine, PhD³

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Sexual and gender minority youth (SGMY) report disproportionately high rates of mental and behavioral health problems when compared to their cisgender heterosexual peers. While these disparities are well-documented, less is known about the specific developmental and interpersonal contexts that may contribute to elevated mental health concerns among SGMY. Online research and social media-delivered interventions offer a promising avenue to reach SGMY, many of whom may not be able to participate in traditional research studies or interventions.

This presentation offers insights about SGM adolescents' developmental and interpersonal contexts, gleaned from two recent mixed-methods studies of U.S. SGMY. The first study included in-person qualitative interviews with nine GM youth, and an anonymous nationwide online survey with over 1,900 GMY. This study examined a broad range of mental and behavioral health symptoms, as well as social media use, peer and family relationships, and GM-specific identity development. The second study involved in-person qualitative interviews and quantitative surveys with 20 SGMY in treatment for bipolar disorder. Interviews focused on adolescents' experiences at the intersection of SGM identity, mood symptomatology, suicidality, and behavioral health, with an emphasis on relationships with parents, peers, and romantic partners.

Key insights will be discussed regarding the developmental and interpersonal context of SGMY, which can inform intervention development. For example, adolescence is a developmental period during which youth are typically dependent on parents for basic needs, while also heavily influenced by peers and romantic partners. Our data revealed unique stressors in SGMY relationships with parents, peers, and romantic partners. For many adolescents, interactions with peers occur largely online, and for SGMY, social media offers a double-edged sword. Qualitative interviews highlighted that social media can provide an opportunity to connect with and receive support from other SGM peers, paired with risks of peer victimization or negative feedback. Similarly, social media-delivered interventions for SGMY offer both great promise and unique challenges—providing the ability to reach SGMY who may not otherwise be reachable (e.g., those who are rural or not “out” to parents), and to connect SGMY with one another, while also raising ethical and practical challenges. Implications for intervention development will be discussed.

2

8:00 AM-9:15 AM

A SOCIAL MEDIA INTERVENTION TO REDUCE SOCIAL ISOLATION AMONG RURAL SEXUAL AND GENDER MINORITY YOUTH: STUDY DESIGN AND PRELIMINARY ACCEPTABILITY

Cesar G. Escobar-Viera, PhD, MD¹, Jaime E. Sidani, PhD, MPH, CHES¹, Ariel Shensa, MA¹, Sam Shaaban, MS², Sophia Choukas-Bradley, Ph.D.¹, Bruce Rollman, MD, MPH¹

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Introduction: Sexual and gender minority youth (SGMY) are at higher risk of social isolation and depression than cisgender heterosexual youth. For rural SGMY, this risk is even higher. While family and school connections protect heterosexual youth from depression, these may not be as available for rural SGMY. Indeed, reducing social isolation and increasing access to SGM-specific mental health resources are top needs of rural SGMY. Many of them turn to social media (SM) for resources/support perceived as unavailable in their surroundings. However, SM can also be a conduit for negative experiences, potentially increasing risk of negative outcomes. We seek to reduce rural SGMY social isolation by developing educational modules to help them take advantage of SM positive aspects while reducing risk of negative interactions. Next, we applied principles of human-centered design (HCD) to guide the development of a SM-based intervention to deliver these modules to SGMY.

Methods: Our study comprises a theory-driven, user-informed development, acceptability evaluation, and usability testing of: (1) educational modules and (2) a social media-based delivery tool. For both components, we use an iterative sequence of expert input, development, and participant feedback via 4 rounds of video-recorded online interviews with 40 rural SGMY ages 14–19 recruited from SM. We collect feedback on intervention content and activities as well as design, aesthetics, features, functionality, ease of use, content relevance, and intervention acceptability.

Results: We identified 5 key SM use behaviors (e.g., passive use, negative interactions) consistently associated with social isolation and depression. These behaviors informed the development of 5 SGMY-specific educational modules based on the motivational theory of life-span development and focused on optimizing SM use to reduce social isolation. This presentation will include preliminary results from content and thematic analysis of qualitative data obtained from the video interviews and descriptive statistics for preliminary acceptability.

Conclusions: This is the first study that leveraged HCD to develop and test the acceptability of a SM-delivered intervention focused on reducing social isolation among rural SGMY. While data are still being collected and final results not yet available, we will share insights and lessons learned regarding online recruitment of this population and implementation of HCD techniques for research.

3

8:00 AM-9:15 AM

FEASIBILITY OF A WEB-ACCESSIBLE GAME-BASED INTERVENTION AIMED AT IMPROVING HELP SEEKING AND COPING AMONG SEXUAL AND GENDER MINORITY YOUTH: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

James Egan, PhD, MPH¹, Matthew DeLucas, BS², Brooke A. Morrill, PhD², Mark S. Friedman, PhD³, Stephanie Corey, M.P.H.³, Emmett Henderson, M.S.³, William Louth-Marquez, MD³, Elizabeth Miller, M.D., Ph.D.⁴, Kimberly Hieftje, Ph.D.⁵, Robert Coulter, Ph.D.³, Dorothy Espelage, Ph.D.⁶, Simon Hunter, Ph.D.⁷, Kaleab Abebe, Ph.D.³

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Introduction: Sexual and gender minority youth (SGMY; e.g., lesbian, gay, bisexual, and transgender youth) experience myriad health disparities compared with their non-transgender heterosexual peers. Despite much research showing these disparities are driven by experiences of bullying and cyberbullying victimization, few interventions have aimed to improve the health of bullied SGMY. One possible way to improve the health of bullied SGMY is via a Web-accessible game intervention. Nevertheless, little research has examined the feasibility of using this kind of intervention with SGMY. We tested the feasibility of a game-based intervention for increasing help-seeking and productive coping skills among SGMY. Primary hypotheses were high levels of implementation fidelity, game demand, and game acceptability.

Methods: We conducted a 2-arm randomized controlled trial (RCT) testing a theory-based, community-informed, Web-accessible computer role playing game intervention. Control condition received a list of resources. Participants completed online surveys at enrollment and 1 and 2-months after intervention delivery. Our primary outcomes were: implementation procedures; game demand; and game acceptability, measured by the valid multidimensional Gaming Experience Questionnaire. We tested hypotheses using a priori benchmarks for feasibility success.

Results: Regarding implementation, 240 SGMY aged 14–18 were randomized into the intervention (n=120) or control (n=120) conditions. All participants completed the baseline survey, 73.3% completed the 1-month follow up, and 64.2% completed the final follow up. Regarding game demand, after enrollment 55.8% of intervention participants successfully downloaded the game, all of whom reported playing it. Of those who played the game, 46.2% reported having a desire to play it again and 50.8% would recommend it to friends. Regarding game acceptability, game-playing participants exceeded hypothesized benchmarks and reported high positive affect (M=2.36; 95% CI=2.13–2.58), low negative affect (M=2.75; 95% CI=2.55–2.95), low tension/annoyance (M=3.19; 95% CI=2.98–3.39), and high competence (M=2.23; 95% CI=2.04–2.43) while playing the game.

Conclusions: We successfully implemented a Web-accessible game RCT with SGMY. Though the demand for the game was lower than anticipated, SGMY found the game to be highly acceptable. A larger scale trial is needed to test whether the game-based intervention can reduce health problems for SGMY.

DIGITAL SMOKING CESSATION INTERVENTIONS FOR SEXUAL AND GENDER MINORITY YOUNG ADULTS: OUTCOMES OF TAILORED AND NON-TAILORED INTERVENTIONS

Erin A. Vogel, PhD¹, Danielle E. Ramo, PhD², Judith J. Prochaska, PhD, MPH¹, Meredith C. Meacham, PhD, MPH², Gary L. Humphreys, PhD²¹Stanford University, Stanford, CA; ²University of California, San Francisco

Introduction: Sexual and gender minority (SGM) individuals have higher smoking and social media use prevalence than their non-SGM peers. We tested 3-month and 6-month versions of the Put It Out Project (POP), a Facebook smoking cessation intervention culturally tailored to SGM young adults.

Methods: Participants were SGM-identified young adult smokers (age 18-25) recruited from Facebook for 3-month (POP-3; N=165) and 6-month (POP-6; N=137) pilot clinical trials. Interventions delivered weekly live counseling sessions and 90 daily Facebook posts to participants in groups individually-tailored to readiness to quit smoking. Analyses compared biochemically verified abstinence, self-reported 7-day point prevalence abstinence, reduction in cigarettes per week by 50+% from baseline, making a quit attempt during treatment, and stage of change between groups at 3-month and 6-month follow-ups. Analysis A compared outcomes between SGM participants who received a 3-month tailored intervention (POP-3), a 3-month non-tailored intervention (NT-SGM), and two historical control conditions. Analysis B examined effects of intervention duration (3 months vs. 6 months) and tailoring (tailored vs. non-tailored) among participants in the POP-3 and POP-6 trials.

Results: Biochemically verified smoking abstinence did not significantly differ between groups, potentially due to challenges with remote biochemical verification (e.g., non-response, nicotine exposure from e-cigarettes). In Analysis A, POP-3 participants were more likely than NT-SGM participants to report abstinence at 3 (23.8% vs. 12.3%; OR=2.50; p=.03) and 6 months (34.5% vs. 12.3%; OR=4.06; p<.001) and reduction in smoking at 3 months (52.4% vs. 39.5%; OR=2.11; p=.03). POP-3 participants were also more likely to report abstinence at 3 months (23.8% vs. 3.3%; OR=6.67, p=.01) and 6 months (34.5% vs. 13.3%; OR=2.78; p=.03) and reduced smoking at 3 months (56% vs. 41.7%; OR=2.70, p=.01) than SGM participants in a historical control condition who received a referral. In Analysis B, tailored interventions resulted in greater likelihood of reported abstinence (Wald chi-square=6.57, p=.010) regardless of duration, and 6-month interventions resulted in greater likelihood of reduced smoking (Wald chi-square=9.49, p=.002).

Conclusions: Findings preliminarily support the effectiveness of a Facebook smoking cessation intervention tailored to SGM young adults. Three months appears sufficient to increase likelihood of abstinence.

HEART DISEASE SELF-CARE

Kenneth E. Freedland, PhD¹, Linda Park, PhD, MS, FNP-BC, FAHA², Judith Skala, PhD, RN³, Barbara Riegel, PhD, RN, FAHA, FAAN⁴, Lora Burke, PhD, MPH, RN, SBM, FAHA, FAAN⁵¹Washington University School of Medicine, Saint Louis, MO; ²University of California, San Francisco, San Francisco, CA; ³Washington University School of Medicine, St. Louis, MO; ⁴University of Pennsylvania, Philadelphia, PA; ⁵University of Pittsburgh, Pittsburgh, PA

Self-care is an umbrella term for a wide range of behaviors that can help to prevent the onset or worsening of chronic diseases or that enable patients to manage their illnesses. Self-care is also relevant to caregivers, many of whom have chronic diseases of their own. Coronary heart disease, heart failure, and other forms of heart disease can impose substantial self-care burdens on patients and caregivers, and a variety of psychosocial, medical, and practical barriers can make it difficult to maintain adequate heart disease self-care. This is a clinically significant problem because inadequate self-care predicts adverse outcomes such as increased risk of rehospitalization in patients with heart disease. Unfortunately, the interventions for heart disease self-care that have been tested so far have met with limited success. Consequently, further research is needed on factors that affect heart disease self-care and on interventions to improve it. This symposium addresses several aspects of heart disease self-care. First, Dr. Linda Park will discuss emerging applications of mobile health (mHealth) strategies to improve self-care in patients with heart disease. Second, Dr. Judith Skala will present the self-care outcomes of a randomized controlled trial of cognitive behavior therapy for major depression in patients with heart failure. Third, Dr. Barbara Riegel will present the design of a recently-funded trial of a self-care intervention for caregivers of patients with heart failure. Finally, Dr. Lora Burke will discuss issues that cut across these three presentations and identify some priorities for heart disease self-care research.

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THE PROMISE OF MOBILE HEALTH TO PROMOTE SELF-CARE OF CORONARY HEART DISEASE

Linda Park, PhD, MS, FNP-BC, FAHA¹¹University of California, San Francisco, San Francisco, CA

Background: Mobile phones are the most commonly used form of technology worldwide and have the potential to promote cardiovascular outcomes. The widespread use of mobile phones has made mobile health (mHealth) a promising solution to advance self-care of coronary heart disease (CHD), which includes supporting health-promoting activities as well as managing illness.

Objective: The aim of this presentation is to outline mHealth strategies that have been applied for self-care of CHD and discuss their efficacy to improve outcomes.

Methods: This is a literature search of clinical trials related to CHD from a comprehensive search of databases from 2000-2019. All articles related to self-care behaviors and CHD were included. The selected studies were critically evaluated to extract and summarize pertinent characteristics and outcomes.

Results: All 18 studies demonstrated text messaging, mobile applications (apps), or a combination of text messaging and mobile apps were effective in improving outcomes. Outcomes of included studies were physical activity, medication adherence, cardiovascular risk profiles (blood pressure, lipids, hemoglobin A1C, smoking cessation body mass index), peak VO₂, quality of life, functional status, and diet. Key factors of success included personalized messages with tailored advice, greater engagement (2-way text messaging, higher frequency of messages), and use of multiple modalities.

Conclusion: Incorporating principles of behavioral activation help promote and sustain healthy lifestyle behaviors in patients with CHD that result in improved clinical outcomes. mHealth strategies have strong potential for improving clinical outcomes; however, long-term efficacy is unknown. Although highly promising, more research is required to determine conclusive results as well as recommendations on clinical implementation.

2

8:00 AM-9:15 AM

SELF-CARE OUTCOMES OF CBT FOR DEPRESSED PATIENTS WITH HEART FAILURE

Judith Skala, PhD, RN¹¹Washington University School of Medicine, St. Louis, MO**Background:** Depression is a potentially treatable barrier to effective self-care of heart failure.**Objectives:** Our group conducted a randomized controlled trial of a cognitive-behavioral intervention for major depression in 158 outpatients with heart failure. The intervention targeted heart failure self-care deficits in addition to depression. Compared to participants who were randomized to usual care, those in the intervention arm had significantly lower post-treatment scores on the Beck Depression Inventory (BDI-II), but the groups did not differ on the Self-Care of Heart Failure Confidence and Maintenance subscales. Since there was considerable variability in heart failure self-care at baseline, we compared the demographic, medical, and psychosocial characteristics of subgroups classified as exhibiting relatively good vs. relatively poor self-care at baseline.**Methods:** This was a single-blind, randomized controlled trial. Depression at 6 months was the primary outcome; heart failure self-care was a secondary outcome.**Results:** The subgroups did not differ on baseline severity of depression but they did differ on several other characteristics. Self-care confidence improved in participants with poor self-care at baseline but not in those with good self-care at baseline. Self-care maintenance did not improve in either subgroup. We also examined the relationships among changes in self-care from the baseline to the post-treatment evaluation and changes in measures of depression, anxiety, physical and social functioning, and quality of life. Improvement in depression was associated with improvement in self-care confidence ($b=-0.14$, $p=0.0005$) and maintenance behaviors ($b=-0.20$, $p=0.007$).**Conclusions:** These results suggest that although depression does not account for the initial presence of self-care deficits, HF self-care tends to improve in parallel with decreases in depression severity when patients are treated for major depression. However, further research is needed to develop a more efficacious intervention for heart failure self-care deficits in depressed patients.

3

8:00 AM-9:15 AM

HEALTH COACHING TO IMPROVE SELF-CARE OF INFORMAL CAREGIVERS OF ADULTS WITH CHRONIC HEART FAILURE (ICARE4ME): STUDY PROTOCOL FOR A RANDOMIZED CONTROLLED TRIAL

Barbara Riegel, PhD, RN, FAHA, FAAN¹¹University of Pennsylvania, Philadelphia, PA**Background:** Persons with chronic heart failure (HF) are living longer. These patients typically live in the community and are cared for at home by informal caregivers. These caregivers are an understudied and stressed group.**Objectives:** The purpose of this two-arm, randomized controlled trial is to test the efficacy of a virtual health coaching intervention on the self-care of HF caregivers. We will (1) compare efficacy of the intervention vs. health information in improving self-care, and (2) estimate the cost and cost-effectiveness of the intervention. An exploratory aim is to examine the effect of caregiver outcomes on HF patient outcomes.**Methods:** A consecutive sample of 250 caregivers of adults with chronic HF is being enrolled from clinic and hospital settings at an institution in the north-eastern US. Both groups receive tablets programmed to provide standardized health information. In addition, the intervention group receives 10 live coaching sessions delivered virtually by health coaches using the tablets. The intervention is evaluated at 6-months, with self-care as the primary outcome. Cost-effectiveness of the intervention is evaluated at 12-months. We are enrolling HF patients (dyads) whenever possible to explore the effect of caregiver outcomes (self-care, stress, coping, health status) on HF patient outcomes (number of hospitalizations and days in the hospital) at 12-months.**Results:** To be determined.**Conclusions:** We expect the proposed study to require 5 years for completion. If shown to be efficacious and cost-effective, our virtual health coaching intervention can easily be scaled to support millions of caregivers worldwide.

Symposium 17

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

TO END THE HIV EPIDEMIC, WE MUST CONSIDER INTERSECTIONAL APPROACHES TO HEALTH FOR SEXUAL AND GENDER MINORITIES OF COLOR

Latesha Elopore, MD, MSPH¹, Katherine G. Quinn, PhD², Eric K. Layland, MS³, Oni Blackstock, MD, MHS⁴¹University of Alabama at Birmingham, Birmingham, AL; ²Center for AIDS Intervention Research, Medical College of Wisconsin, Milwaukee, WI; ³Pennsylvania State University, University Park, PA; ⁴New York City Department of Health and Mental Hygiene, New York, NY

Rates of HIV diagnoses stabilized over the last decade, however, some groups continue to experience greater rates of HIV infection and inordinate barriers to care. Despite advances in biomedical intervention to prevent HIV (i.e., pre-exposure prophylaxis, PrEP), HIV infection rates remain disproportionately high among Black and Latinx men who have sex with men (MSM) and transwomen (TW). The national initiative to end the HIV epidemic in the US requires focusing on populations where HIV burden is greatest. We use an intersectional framework to investigate diverse, multi-level determinants of health and HIV prevention among Black and Latinx MSM and TW in HIV high-burden areas.

Abstract 1: For Black MSM in the Deep South, a conservative environment converges with personal challenges to acceptance and expression. In-depth interviews uncovered unique, cultural challenges to identity affirmation, social network value in supporting identity validation, and social network composition complexity. Black women were identified as key players in the social support of Black MSM. Engaging Black MSM in HIV prevention in the Deep South will be improved when these intersecting cultural and social factors are considered.

Abstract 2: An intersectional approach to syndemic theory considers how inequity and oppression experienced by Black gay and bisexual men (GBM) and TW contributes to multiple, converging health burdens. Results demonstrate how intersections of racism, homonegativity, and structural disadvantage among Black GBM and TW influence syndemic conditions including HIV risk. Future application of syndemic theory will be enhanced by considering the impact of intersectional stigma uncovered in this study.

Abstract 3: Inequitable distribution of PrEP services creates structural barriers to HIV prevention among MSM. Geo-spatial mapping of MSM mobile app users revealed inequitable distribution of PrEP services by race/ethnicity, age, and neighborhood. Black, Latino, and Asian MSM were further from PrEP services than White MSM. In neighborhoods with more MSM of color, resources were more limited. These results support the need to consider both individual and structural factors influencing HIV prevention.

The HIV epidemic cannot be ended without centering the experiences of Black and Latinx MSM and TW. Effective intervention is only made possible by acknowledging and addressing intersectional stigma interlocked with structural and social barriers to HIV prevention.

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TO ADEQUATELY INCREASE UPTAKE OF PREP AMONG YOUNG BLACK MEN WHO HAVE SEX WITH MEN, MORE EMPHASIS IS NEEDED ON INTERVENTIONS TO INCREASE ACCEPTANCE OF SEXUAL IDENTITY

Latesha Elopore, MD, MSPH¹, Sophia Hussen, MD, MPH², Corilyn Ott, PhD³, Michael Mugavero, MD, MHSc⁴, Janet M. Turan, PhD, MPH⁴¹University of Alabama at Birmingham, Birmingham, AL; ²Emory University; ³University of Alabama at Birmingham; ⁴University of Alabama at Birmingham, Birmingham, AL

Background: The potential to end the HIV epidemic is possible with scientific advances in treatment and prevention of infections among those at highest risk. However in the United States, inequities in infection rates are evident among sexual and racial minority populations, especially Young, Black Men who Have Sex with Men (YBMSM) living in the South. These disparities may be amplified due to disparate utilization of biomedical prevention tools like HIV preexposure prophylaxis (PrEP). Previous in-depth interviews (N = 47) with YBMSM elucidated that intersectional stigma related to race and sexual orientation contextualized in a socially conservative, Southern state was a major barrier to accessing PrEP due to inability to personally accept and freely express sexual identity. As a way forward, we explored potential sources of social support among YBMSM to gain self-acceptance of sexual identity.

Methods: Twenty-five In-depth interviews were conducted with YBMSM using constructs from the Anderson's Behavioral Healthcare Utilization Model (ABM). Inclusion criteria: 1) HIV- negative infection status 2) Cis-gender men with self-reported sex with men (in the past 6 months), 3) African American, 4) English speaking, 5) Age 16-29 years. Coding and analyses were conducted with NVivo software. A preliminary coding scheme was created for first-level analysis based on ABM constructs. Then based on this analysis, more refined second-level coding was conducted.

Results: The median age of participants was 24, with two-thirds reporting having a regular source for healthcare. Common emerging themes were the following: 1) Cultural norms within Southern, Black communities hindered acceptance of sexual identity; 2) Social-support networks facilitated self-validation of sexual identity and; 3) Social support networks were often complex in composition. Within each theme, we discovered several subthemes related to the critical role Black women play in social support networks.

Conclusions: As we move the Ending the HIV Epidemic national public health initiative forward, it is vital to understand the critical steps necessary for largely disenfranchised populations to utilize HIV prevention strategies like PrEP. Results presented have been used to inform quantitative survey development in a mixed methods study to evaluate generalizability among YBMSM in the Deep South. Preliminary results suggests intersectional stigma among YBMSM living in the South must be addressed to reach this national goal.

2

8:00 AM-9:15 AM

AN INTERSECTIONAL UNDERSTANDING OF SYNDEMICS EXPERIENCED BY YOUNG BLACK GAY AND BISEXUAL MEN

Katherine G. Quinn, PhD¹, Erika Christenson, MPH², Jeffrey A. Kelly, PhD³, Yuri Amirkhanian, PhD³¹Center for AIDS Intervention Research, Medical College of Wisconsin, Milwaukee, WI; ²Medical College of Wisconsin; ³Medical College of Wisconsin, Milwaukee, WI

Background: Syndemic theory has been useful in illuminating the co-existence and reinforcing nature of multiple health and social conditions that contribute to HIV risk. However, one critique of syndemic research has been its tendency to focus on gay and bisexual men (GBM) as a homogeneous population, with little attention to power and oppression along the axes of race, ethnicity, class, or sexual and gender identity. Applying an intersectional framework to syndemics can help demonstrate how social and structural inequities and oppressions facing young Black GBM contribute to and reinforce syndemic health conditions. The current study aimed to characterize and understand syndemics among young Black GBM by incorporating an intersectionality framework.

Methods: In 2018, we conducted 50 in-depth qualitative interviews with a conveniences sample of young Black GBM in Milwaukee, WI and Cleveland, OH. Participants were 18 years of age or older, Black or African American men or trans women, and gay, bisexual, or same-gender-loving. Transcribed interviews were coded using a multi-stage analytic coding strategy in MAXQDA qualitative analysis software. We used thematic content analysis to characterize syndemics and intersectional stigma among this sample and examine how intersectional stigma influences syndemic conditions experienced by Black GBM.

Results: Our results demonstrate how racism, homonegativity, and structural disadvantage contribute to syndemic conditions of childhood trauma, depression, substance use, and HIV risk experienced by Black GBM. Our results highlight the nature of intersectional racism and homonegativity in participants' lives, and the expectations of masculinity and structural disadvantage faced by many Black GBM. We then demonstrate how these experiences of intersectional stigma influences the syndemic conditions of childhood trauma, mental health, substance use, and HIV risk. Excerpts from interviews are used to illustrate these themes and demonstrate the importance of incorporating an intersectional lens to understand syndemics among Black GBM.

Conclusions: This study demonstrates that broader systems of oppression and disadvantage facing young Black GBM contribute to syndemic conditions. Future conceptualizations and measurements of syndemics must capture these experiences to strengthen our understanding of syndemics among young Black GBM.

3

8:00 AM-9:15 AM

MAPPING INEQUITABLE DISTRIBUTION OF HIV PREVENTION RESOURCES BY RACE/ETHNICITY, NEIGHBORHOOD, AND AGE AMONG MEN WHO HAVE SEX WITH MEN

Eric K. Layland, MS¹, Lik Sam Chan, PhD², Eliza Cassidy, PhD³, Joshua Rosenberger, PhD⁴¹Pennsylvania State University, University Park, PA; ²Chinese University of Hong Kong; ³Queensland University of Technology; ⁴The Pennsylvania State University, University Park, PA

Introduction: Black and Latino men who have sex with men (MSM) disproportionately constitute the majority of new HIV diagnoses. Access to HIV/STI testing and pre-exposure prophylaxis (PrEP) reduces HIV infection risk. However, the location of these resources may not be equally accessible to all MSM, creating subgroups of MSM, often clustered by race/ethnicity, who are at greater risk due in part to limited access to preventative services.

Methods: In November, 2018, profile content and geo-location data were collected from Asian, Black, Latino, and white MSM users of a social and sexual networking mobile application in New York City ($n = 1,692$) and Los Angeles ($n = 1,116$). In each city, user location was mapped and stratified by race/ethnicity then PrEP service locations were subsequently overlaid, and, finally, distances between users and nearest PrEP location were estimated in miles. Regression was used to estimate associations of race/ethnicity, age, and neighborhood with distance to nearest PrEP services.

Results: Overall differences based on race/ethnicity, age, and neighborhood were seen in both cities, with city maps illustrating different proportions of PrEP services and racial/ethnic distribution. In Los Angeles, white MSM were 0.12 to 0.17 miles closer than other MSM to the nearest PrEP services. MSM in south LA, who were predominantly Black, were furthest from PrEP services. In New York, Asian MSM were 0.26 to 0.32 miles further from PrEP services than all other groups, however, within boroughs, Black MSM and Asian MSM were further from PrEP services than white MSM. In both cities, the youngest and oldest men were furthest from PrEP services.

Conclusion: Results of this study highlight potential structural inequities in healthcare access among MSM in Los Angeles and New York. Geo-spatial mapping provides an opportunity to visualize data to understand demographic differences across locations and identify where service needs may be unmet. Future consideration should be given to the characteristics and distribution of MSM when determining where to provide HIV/STI prevention, with a particular focus on race/ethnicity.

Thursday April 2nd, 2020 10:45 AM-11:45 AM

Paper Session 1

10:45 AM-11:00 AM

MODELLING MULTIPLE HEALTH BEHAVIOR CHANGE WITH NETWORK ANALYSES: RESULTS FROM A ONE-YEAR TRIAL CONDUCTED AMONG OBESE ADULTS

Guillaume Chevanec, PhD¹¹University of California, San Diego, San Diego, CA

Introduction: health behavior change is a key component of weight management strategies in overweight and obese adults. Improving physical activity, diet, and sleep behaviors reduces weight and improves overall health among adults with obesity. However, it is unclear whether interventions should target these behaviors individually or together in some combinations, and if the latter, which combinations actually promote successful behavior change. The first objective of this study was to examine the between-person patterns of associations between seven self-reported health behaviors measured over one year among overweight and obese adults who participated in a weight loss intervention. The second objective was to assess how these behaviors covary within-individuals across the intervention. Unique to our study, we analyzed behavioral associations using network analyses. Comparing to cluster analyses and mixed-model analyses, this statistical approach offers a unique ability to efficiently visualize, understand and compare the associations and covariations between behaviors.

Method: the present study included data from a 12-month intervention (N = 278). Seven health behaviors (physical activity, sedentary behavior, sleep duration, and consumption of fruits, vegetables, total fat and added sugar) were measured (i.e., via self-reported questionnaires) at baseline, 6 and 12-months. Between- and within-participant network analyses were conducted to examine how these behaviors were associated through the 12-month intervention and covaried across months.

Results: Participants (N = 278, 260, and 253 at baseline, 6-month, and 12-month visits) were 77% male, 41% Hispanic, 44% college graduate or higher, and 22% unemployed. Participants were on average 41.7 (SD = 11.1) years old and had a mean BMI of 32.7 (SD = 3.4) kg/m². At the between-participant level, over the 1-year intervention, associations were found within (i) diet behaviors, (ii) between diet and sedentary behavior and (iii) between sugar and sleep. At the within-participant level (i.e., covariations over months), associations were found (i) between sedentary and diet behaviors, and (ii) within diet behaviors.

Discussion: The findings from our study, and especially those related to the covariations between behaviors suggest that successful weight loss interventions will need, first, to simultaneously target sedentary and diet behaviors, as there are likely to co-vary within-individuals; and, second, address compensatory behaviors (e.g., eating dessert to reward oneself for eating more vegetables) in the diet domain.

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Paper Session 1

11:00 AM-11:15 AM

A LOW-TOUCH ACT-BASED INTERVENTION TO INCREASE MVPA AMONG INACTIVE ADULTS WITH OVERWEIGHT/OBESITY

Jason Lillis, Ph.D.¹, Dale Bond, Ph.D.², Graham Thomas, Ph.D.²¹Brown Medical School, Roseville, CA; ²Brown Medical School, Providence, RI

Despite the importance of adoption of habitual moderate to vigorous-intensity physical activity (MVPA) for health benefits and long-term weight management, current comprehensive lifestyle interventions place little emphasis on theory-based motivational strategies to promote physical activity (PA) behavior change and have only modest impact on MVPA. Research on Self-Determination Theory (SDT) shows that higher autonomous motivation to engage in physical activity relates to higher MVPA levels. Acceptance and Commitment Therapy (ACT), a well validated, newer generation behavioral approach uses values clarification and commitment strategies, along with acceptance-based skills training, to effect health behavior change that is consistent with personally identified values. Thus, ACT serves as a theoretically consistent and potentially powerful intervention framework from which to target values-based autonomous motivation for increasing average weekly MVPA.

In this open trial, 36 insufficiently active adults with overweight/obesity received a 4-hour, ACT-based workshop followed by weekly emails and monthly phone calls for 3 months. Participants received education and training in values clarification and acceptance-based skills to increase values-based autonomous motivation and bouts MVPA. Primary (accelerometer-determined bouts MVPA minutes/week) and secondary (values-consistent action and autonomous motivation) outcomes were assessed at baseline and 3-months. Results demonstrated the intervention was feasible with 76.5% email survey completion, 94.7% phone call completion rate, and 92% retention at 3 months. Participants achieved a near 4-fold increase in daily bouts MVPA from a mean of 34.4 (±46.62) minutes at baseline to a 125.6 (±96.65) at 3 months (p < .001; d = 1.21). Participants also showed significant increases in values-consistent action (p = .044; d = 0.28) and autonomous motivation (p = .006; d = 0.53).

Results: support the feasibility and preliminary efficacy of this relatively low-touch intervention approach, consisting of a single ACT-based group-based workshop, weekly e-mails, and monthly phone calls, for increasing engagement in bouts MVPA among individuals who have overweight/obesity and initially low MVPA. Changes in targeted mechanisms provide additional support for the underlying theory. Additional rigorous testing of this approach in randomized clinical trial is warranted.

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MERITORIOUS AWARD WINNER

Paper Session 1

11:15 AM-11:30 AM

USING SOCIAL NETWORKS TO PREDICT TREATMENT OUTCOMES AND ATTENDANCE IN ADULT BEHAVIORAL WEIGHT LOSS INTERVENTIONS

Alena C. Borgatti, B.A.¹, Olivia M. Krantz, Bachelor of Science², Gareth Dutton, PhD¹, Meghan busky, n/a²

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Background: Adult behavioral obesity interventions are often delivered in groups, a cost-effective approach that may improve weight loss outcomes. While it has been theorized that support from group members improves treatment outcomes, no studies have evaluated the social relationships formed within these adult groups, or whether such relationships impact treatment outcomes. Similar to recent research in pediatric treatment samples, the current project utilized social network analysis (SNA) to identify structural ties that may improve adherence and weight loss among adults participating in a group-based obesity intervention.

Methods: Participants (N=61, mean weight=103.7kg, 60% African American, 95% female) were enrolled in 4 weight loss groups that met for 1 year, with 24 weekly sessions followed by 12 bi-weekly sessions. Analyses from 6-month networks measured reciprocal ties, a relationship in which two participants list each other as a person they most frequently interact with (interaction ties), go to for advice (advice ties), and like most (popularity ties). Outcomes included attendance at group meetings and weight loss (%) after 1 year. Baseline weight and race were retained as covariates.

Results: Advice tie models significantly predicted attendance ($R^2=0.246$, $F(3, 57)=6.188$, $p<0.01$), with each reciprocated advice tie predicting 2.41 more attended sessions ($B=2.41$, $p=0.003$). Similarly, interaction tie models were significant ($R^2=0.34$, $F(3, 57)=9.89$, $p<0.001$), with attendance increasing by 1.71 sessions per interaction tie ($B=1.71$, $p<0.001$). The popularity tie model had similar results ($R^2=0.39$, $F(3, 57)=12.158$, $p<0.001$), with each popularity tie predicting 2.1 more sessions attended ($B=2.07$, $p<0.001$). In regard to weight loss, popularity tie models were also significant ($R^2=0.192$, $F(3, 47)=3.719$, $p=0.018$), with each popularity tie predicting 1.2% more weight loss ($B=1.23$, $p=0.021$). Similarly, the interaction tie model was significant ($R^2=0.191$, $F(3, 47)=3.699$, $p=0.018$), with each tie resulting in 1.1% more weight loss ($B=1.11$, $p=0.021$) ($p<0.05$). However, advice tie models did not significantly predict weight loss ($R^2=0.142$, $F(3, 57)=2.60$, $p=0.063$).

Discussion: Results indicate that group dynamics and social ties in behavioral weight loss interventions may strongly impact 1-year attendance and treatment outcomes. Future studies are needed to replicate these findings, and to identify strategies that enhance group cohesiveness to potentially improve participant retention and treatment response.

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Paper Session 1

11:30 AM-11:45 AM

A GENDER-SENSITISED WEIGHT LOSS PROGRAM FOR OVERWEIGHT AND OBESE MEN (AUSSIE-FIT): A PILOT RANDOMISED CONTROLLED TRIAL.

Dominika Kwasnicka, PhD¹, Eleanor Qusted, PhD², Nikos Ntoumanis, Prof², Robert U. Newton, BHMS(Hons), MHMS, PhD³, Daniel Gucciardi, PhD², Cecilie Thøgersen-Ntoumani, Prof², Jenny L. Olson, PhD², Suzanne Robinson, Prof⁴

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Background: Recent evidence shows that sport settings can act as a powerful 'hook' to engage men in weight loss. The primary objective of this pilot study was to test feasibility of delivering and evaluating preliminary efficacy of Aussie-FIT, a weight loss program delivered in Australian Football League settings for overweight/obese men, in preparation for a future definitive trial.

Methods and Findings: This 6-month pilot trial took place in Perth, Australia. Participants were overweight/obese (BMI >28 kg/m²) middle-aged (35-65 years old) men. The intervention was 12 weekly 90-minute face-to-face sessions, incorporating physical activity, nutrition, and behaviour change information and practical activities delivered at 2 clubs by coaches. Data were collected at baseline and immediately post-intervention. For trial feasibility purposes, 6-month follow-ups were completed. Main outcomes were recruitment and retention rates, and differences in weight loss, self-reported measures (e.g., psychological well-being), device-measured physical activity, waist size, and blood pressure at 3 months. Within 3 days of advertising at each club, 426 men registered interest; 306 (72%) were eligible. Men were selected on first-come-first-served basis ($n=130$; M age=45.78, SD=8.01; M BMI=34.48 kg/m², SD=4.87) and randomised by a blinded researcher. Trial retention was 86% and 63% at 3 and 6 month follow-ups (respectively). At 3 months, mean difference in weight between groups, adjusted for baseline weight and group, was 3.33 kg (95% CI 1.89, 4.77) in favour of the intervention group ($p<0.001$). The intervention group's moderate-to-vigorous physical activity was higher than the control group's by 8.54 mins/day (95% CI 1.37, 15.71, $p=.02$). Meaningful differences were observed in several secondary outcomes favouring the intervention group. No adverse events were reported.

Conclusions: Aussie-FIT was feasible to deliver; participants increased physical activity, decreased weight and reported improvements in other outcomes. In a future trial, retention could be improved by timing assessments away from holiday seasons. Trial registration: Australian New Zealand Clinical Trials Registry: ACTRN12617000515392.

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Paper Session 2

10:45 AM–11:00 AM

SIMILARITIES AND DIFFERENCES IN HEALTH-RELATED-BEHAVIOR CLUSTERING AMONG OLDER ADULTS IN EASTERN AND WESTERN COUNTRIES

Jing Liao, PhD¹¹Sun Yat-sen University, Guangzhou, Guangdong, China**Aim:** To quantify variations in health-related behaviors (HRB) clustering of older adults in Western and Eastern countries.**Methods:** Using six aging cohorts from the USA, England, Europe, Japan, Korea and China, latent class analysis was applied to access the clustering of smoking, alcohol consumption, physical activity and social activity.**Results:** A total of 104 552 participants (55% women) aged ≥50 years in 2010 were included. Despite a different number of clusters identified, three consistent cluster profiles emerged: “Multiple-HRB” (ex-/never smoking, moderate drinking, frequent physical and social activity); “Inactives” (socially and physically inactive without other risk behaviors); and “(ex-)Smokers with Risk Behaviors”. Sex and cohort variations were shown. For men in Western cohorts, “Multiple-HRB” was the predominant cluster, whereas their Asian counterparts were more likely to be members of the “Smokers with risk behavior” and “Inactives” clusters. Most women, particularly those in Asian cohorts, were never smokers and non-drinkers, and most of them belonged to the socially “Inactives” cluster.**Conclusions:** We provide a person-centered understanding of HRB clustering of older adults over selected countries by sex, informing tailored health promotion for the target population.**CORRESPONDING AUTHOR:** Jing Liao, PhD, Sun Yat-sen University, Guangzhou, Guangdong, China; liaojing5@mail.sysu.edu.cn

Paper Session 2

11:00 AM–11:15 AM

AEROBIC EXERCISE TRAINING AND SYSTEMIC INFLAMMATION: RESULTS FROM TWO RANDOMIZED CLINICAL TRIALS

Richard P. Sloan, PhD¹, Peter A. Shapiro, MD², Matthew N. Bartels, MD, MPH³, Vincenzo Lauriola, MS, MS¹, Kathleen McIntyre, MSW², Daichi Shimbo, MD², Martina Pavlicova, n/a⁴, Jennifer Scodes, MS⁵, Tse-Hwei Choo, MPH⁴, C. J. Choi, M.S.⁶, Kevin Tracey, MD⁷, Yaakov Stern, PhD⁴¹Columbia University Irving Medical Center, New York, NY; ²Columbia University Medical Center, New York, NY; ³Albert Einstein College of Medicine/Montefiore Medical Center, Bronx, NY; ⁴Columbia University, New York, NY; ⁵NYSPI, New York, NY; ⁶Research Foundation for Mental Hygiene, New York, NY; ⁷Feinstein Institute for Medical Research, Manhasset, NY**Importance:** The cardioprotective effects of aerobic exercise and the well-established role of inflammation in atherosclerosis suggest that one mechanism by which exercise contributes to cardioprotection is through anti-inflammatory effects. Observational studies consistently support this hypothesis. Intervention studies are less consistent.**Objective:** To determine if aerobic exercise training, compared to control conditions, reduces levels of circulating TNFα, IL-6, and CRP in sedentary adults. We conducted two randomized controlled trials: Trial 1, 2010–2015, 16-week follow-up; Trial 2, 2010–2016, 24-week follow-up. Observers were blind to group assignment.**Setting:** The trials were single site studies, with recruitment from local communities**Participants:** Trial 1: young, healthy but sedentary adults (age 20–45 years, 991 screened, 119 randomized, 98 completed). Trial 2: young and older healthy but sedentary adults (age 20–67 years, 775 screened, 132 randomized, 94 completed).**Interventions:** In Study 1, participants were randomized to a 12-week, 4X/week training program or wait-list control condition. Study 2 participants were randomized to a 24-week, 4X/week training program or a stretching/toning condition. Both exercise groups trained at 55–65%, 65–75%, and at 80% of maximum heart rate based on the study entry cardiopulmonary exercise test in weeks 1–2, 3–4, and the remaining weeks, respectively.**Main Outcomes and Measures:** The primary outcomes were circulating levels of TNFα, IL-6, and CRP.**Results:** Aerobic training but not the control conditions led to significant increases in aerobic capacity (Study 1: 4.13 ml/kg/min, $p < .001$; Study 2: 3.05 ml/kg/min, $p = .007$). Despite these training-induced improvements in aerobic capacity, there were no significant treatment effects on circulating levels of TNFα, IL-6 or CRP at the end of treatment interventions in either study, in both intention-to-treat and per-protocol analyses.**Conclusions:** Aerobic exercise training sufficient to improve cardiorespiratory fitness failed to produce reductions in circulating TNFα, IL-6, or CRP in two separate trials of sedentary but otherwise healthy participants. Although exercise training may promote cardioprotection by anti-inflammatory effects in participants with risk factors for CVD or in patients, these results do not support the hypothesis that this mechanism pertains to exercise training-induced cardioprotection in sedentary but otherwise healthy adults.**CORRESPONDING AUTHOR:** Richard P. Sloan, PhD, Columbia University Irving Medical Center, New York, NY; rps7@columbia.edu

Paper Session 2

11:15 AM–11:30 AM

POWER LAWS, RESILIENCY, AND RESISTANCE TO PHYSICAL ACTIVITY INTERVENTIONS

Vincent Berardi, PhD¹, Marc A. Adams, PhD, MPH², David Pincus, n/a³, Evan Walker, Masters in Computational and Data science⁴, Michael Todd, PhD², Mindy L. McEntee, PhD², Melbourne Hovell, MA, Ph.D. MPH⁵

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Background: Over the past decades, there has been little change in adults meeting moderate-to-vigorous physical activity (MVPA) guidelines. Numerous individual-level MVPA interventions have been performed with varying, but typically modest, success. Recent advances in intervention technology now make it possible to continually assess physical activity for extended periods of time, which enables novel features within MVPA interventions to be examined. One such feature is the robustness of daily MVPA patterns, in terms of resistance to change. Based on the ubiquity of power law distributions in healthy, functioning natural systems, we hypothesized that: a) robustness of daily MVPA patterns could be estimated by how well the distribution of daily MVPA minutes approximates an inverse power law distribution, and b) individuals with more robust patterns would be more resistant to intervention effects, and thus have poorer intervention outcomes.

Methods: Participants (N = 512) were asked to wear an ActiGraph GT9X accelerometer for one year and, depending on their study condition, received financial rewards for either meeting daily MVPA goals or continuing to wear/sync their device. An inverse power law was fit to the distribution of each person's daily MVPA mins over the first 100 intervention days, yielding a fit index that, similar to an r^2 in regression, assessed the strength of the power law characteristic for that person's daily MVPA values. The association between the fit index and intervention performance, as measured by total number of goals met over the remainder of enrollment, was explored via linear regression. A second regression model explored moderation via interaction terms.

Results: Adjusting for mean daily MVPA over the first 100 intervention days, power-law fit index was negatively correlated with the attainment of MVPA goals ($p < 0.001$). An interaction between fit index and mean daily MVPA over the first 100 days was also found ($p = 0.05$), indicating that the negative correlation between fit index and intervention performance was stronger for those with higher mean daily MVPA.

Discussion: Results suggest adherence of daily MVPA patterns to a power law distribution is associated with smaller intervention impact. From a complexity science perspective, power law fits are often associated with healthy stable systems with dynamics resistant to perturbations. Here, the intervention could be viewed as a perturbation that fails to move participants away from a pattern of insufficient activity. The power-law fit index described in this study could serve as a useful diagnostic for assessing the potential effectiveness of an MVPA intervention on a single-case basis.

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Paper Session 2

11:30 AM–11:45 AM

PHYSICAL ACTIVITY AND MENTAL HEALTH DURING THE TRANSITION FROM ADOLESCENCE TO EMERGING ADULTHOOD: A SYSTEMATIC REVIEW

Matthew Kwan, PhD¹, Alessandra Ceccacci, BHSc², Natalie Paolucci, BHSc³, Amanda L. Rebar, PhD⁴

¹McMaster University, Hamilton, ON, Canada; ²University of Toronto, Hamilton, ON, Canada; ³University of Toronto, Hamilton, ON, Canada; ⁴Central Queensland University, Coee Bay, Queensland, Australia

Background: Late adolescence and emerging adulthood is an important period for onset of mental health problems, and correspondingly, a period of significant declines in physical activity (PA) behaviours. Although it is well recognized that PA has positive benefits on mental health on mental health outcomes, no systematic review or meta-analyses have focused on the relationship between PA and mental health during the broader transition from late adolescence to emerging adulthood. The purpose of this current study was to conduct a systematic review of prospective or longitudinal studies that investigate the associations between PA and the specific outcomes of depressive symptoms, anxiety, perceived stress across this major life transition.

Methods: A total of 3956 studies were initially screened, and were selected if it included: (a) a mean sample age between 15 and 25 years; (b) non-clinical populations; (c) a longitudinal or long-term experimental design; and (d) included either an assessment of PA or a specific PA-based intervention, and at least one outcome measure of depressive symptoms, anxiety, and/or perceived stress.

Results: A total of 19 studies met the eligibility criteria and were included in the current review. The vast majority of the studies identified were intervention trials ($n=16$), while only 3 of the studies used a longitudinal observational design. Among the 12 intervention studies examining the impact of PA on depressive symptoms, 10 (83%) found positive inverse relationships. Results for anxiety and perceived stress were however equivocal, as only 36% (4 of 11) and 57% (4 of 7) of the intervention studies found a significant effect on anxiety and stress, respectively. Only one observational study found a significant association between PA and mental health outcome.

Conclusions: These results reinforce the notion that PA-based programs are important in helping reduce psychological distress during the transition from late adolescence through emerging adulthood. Its impact on anxiety and perceived stress, however, are much less clear. Our results also suggest that there have been few longitudinal observational studies that have examined the relationship between PA and mental health outcomes over time during this critical transition period. More robust longitudinal data examining how the PA is related to mental health outcomes over time is needed, and in particular during the transition from adolescence into emerging adulthood.

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Paper Session 3

10:45 AM–11:00 AM

RELATIONSHIPS BETWEEN DAILY SYMPTOM RATINGS AND MVPA IN BREAST CANCER PATIENTS UNDERGOING CHEMOTHERAPY: A LONGITUDINAL STUDY

Payton E. Solk, BA¹, Kara L. Gavin, PhD², Whitney A. Welch, PhD¹, Marilyn Lu, BA¹, Jennifer H. La, Bachelor of Science in Health Systems Management¹, Jason Fanning, PhD³, Cesar A. Santa-Maria, MD, MSCI⁴, William Gradishar, MD⁵, Seema A. Khan, MD⁵, Swati Kulkarni, MD¹, Juned Siddique, DrPH¹, Siobhan M. Phillips, PhD, MPH¹

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Background: Increased moderate to vigorous physical activity (MVPA) during chemotherapy (CT) is beneficial for breast cancer (BC) patients, but treatment-related symptoms may be a barrier to PA participation. Existing data on PA and treatment-related side effects during CT are based on infrequent self-reports. Ecological momentary assessment (EMA) may help us better quantify PA levels and monitor symptom burden during CT for BC because it allows for continuous assessment in real time in the real world. The purpose of this study was to use EMA to examine the relationship between daily PA fluctuations and symptom burden in BC patients during CT.

Methods: Women undergoing CT for BC were instructed to wear an accelerometer 24/7. Text message prompts were sent 4 times/day for 10 consecutive days (3 days pre-, day of, and 6 days post-CT dose) to rate symptoms (i.e. anxiety, depression, fatigue, pain, physical function, cognitive function). This method was repeated at three time points: the beginning, middle and end of CT. Separate mixed models were used to examine the between and within person relationship of average daily symptoms and daily minutes of same day MVPA and next-day MVPA controlling for relevant covariates.

Results: Between subject variation in walking physical function ($\beta=-6.56$, $p=0.04$) and cognitive function ($\beta=6.23$, $p=0.03$) and within person walking physical function ($\beta=-4.89$, $p < 0.001$) and cognitive function ($\beta=3.57$, $p < 0.001$) were associated with same day MVPA. Within person associations for affect ($\beta=1.90$, $p < 0.001$), anxiety ($\beta=-1.41$, $p=0.01$), fatigue ($\beta=-4.93$, $p < 0.001$), pain ($\beta=-1.49$, $p < 0.001$) and everyday activities physical function ($\beta=-4.25$, $p < 0.001$) were significantly associated with same day MVPA. Higher than average symptom ratings on a given day were associated with less MVPA that day. Within person variation in pain ($\beta=0.62$, $p=0.03$) was the only significant symptom associated with next day MVPA. Higher than average pain ratings on a given day were associated with less MVPA the next day.

Conclusions: Daily within and between person variations in symptoms were associated with same day and next day MVPA during CT for BC patients. Tailoring activity interventions to meet the needs of an individual's daily variations in symptoms during CT could enhance MVPA and intervention effectiveness. Future work should explore these relationships further to identify and test effective intervention tailoring strategies.

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Paper Session 3

11:00 AM–11:15 AM

SOCIAL DETERMINANTS OF CANCER CAREGIVERS' HEALTH CHALLENGES: A LONGITUDINAL INVESTIGATION

Youngmee Kim, PhD¹, Hannah-Rose Mitchell, MPH², Amanda Ting, MS¹, Armando J. Mendez, PhD³

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Cumulative evidence suggests that family caregivers of adult cancer patients are vulnerable to poorer physical health than their non-caregiver counterpart. This study tested the extent to which psychosocial factors would predict poor health manifested in compromised physiological markers and greater development of morbid conditions during the first two years since the relative's cancer diagnosis.

Family caregivers (N=155, 51.1 years old, 72% female, 20% income < \$40,000) of colorectal cancer patients completed questionnaires and provided blood samples around 3 months (T1) and 20 months (T2) after their relative's cancer diagnosis. Age, gender, income, psychosocial factors including caregiving stress (Pearlin Stress Scale), loneliness (UCLA Loneliness Scale), and social support (ISEL), and morbidity (MICCI) were self-reported. Telomere length (TL), a measure of cellular aging, was assayed from the blood samples.

Caregivers had an average 2.7 pre-existing morbid conditions and shorter TL, compared with TL reported in a study with healthy adults, at the start of caregiving. The number of morbidity and TL at T1 were highly correlated with those at T2 ($r > .38$, $p < .02$). General linear modeling predicting morbidity and TL at T2, controlling for those at T1, revealed that poorer social support ($B = -1.56$, $p = .028$) and (marginally) greater loneliness ($B = 1.08$, $p = .097$) at T1 related to increased morbidity at T2, whereas older age ($B = -0.01$, $p = .042$) related to shorter TL at T2. Caregiving stress at T1 and social factors at T2 were not significantly related to development of morbidity and changes in TL at T2.

This study provides the first evidence that older family caregivers and those lacking social resources are vulnerable to pre-mature aging during the first two years of caregiving. Targeting such subgroup of family caregivers at risk and developing interventions to promote the establishment and maintenance of effective social relationships will be critical to attenuate the premature physical health decline among family cancer caregivers, a large under-supported population. A longer follow-up investigation with a larger sample is warranted for elucidating cancer caregiving linking to health challenges.

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Paper Session 3

11:15 AM-11:30 AM

AFFECTIVE VARIABILITY AND DEPRESSION IN CANCER CARE-GIVERS: AN ECOLOGICAL MOMENTARY ASSESSMENT FEASIBILITY STUDY

Kelly M. Shaffer, PhD¹, Jillian Glazer, N/A², Tri Le, MD³, Matthew J. Reilly, MD³, Philip Chow, PhD⁴, Lee M. Ritterband, PhD¹

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Objectives: Approximately 25% of the 3 million cancer caregivers in the US are at risk for developing depression. Prior studies of depressive symptoms in caregivers have limited generalizability and actionability due to reliance on retrospective and/or cross-sectional design. This study undertook one of the first ecological momentary assessment (EMA) studies among active cancer caregivers to examine the feasibility of this approach as well as to better understand caregivers' day-to-day affective experiences and how these relate to their depressive symptoms.

Methods: Caregivers who reported actively supporting a family member or family-like individual receiving cancer care were approached for recruitment at outpatient oncology clinics. Participating caregivers completed a baseline survey, which included the PHQ-8 to measure depressive symptoms. The EMA protocol began the following day and comprised 8 prompts per day for 7 days. EMA prompts included 20 affective items (5 items each for negative deactive [NDA], positive deactive [PDA], negative active [NAA], and positive active affect [PAA]). Caregivers received a feedback survey at the end of the study. Feasibility metrics included enrollment, EMA prompt completion, and feedback survey responses. Affective variability and its relation to caregivers' depressive symptoms was examined using a novel two-stage data analytic approach through the freeware program MIXWILD.

Results: Of 29 caregivers approached, 2 were ineligible, 4 refused, and 23 (79%) enrolled. Participating caregivers completed 70% of EMA prompts on average (Median=78%, range=23%-100%). Of the 18 caregivers that completed feedback surveys, most reported the number of prompts issued per day (n=12, 67%) and the duration to complete each prompt (n=16, 89%) was acceptable. Regarding affective variability, there was significant within-subject variability in each of the four affective domains (ps< .001); there was significant between-subject variability in NDA only (p< .001). Caregivers' higher individual mean levels of NAA and NDA and lower mean levels of PDA related to their higher level of baseline depressive symptoms (ps< .01). For NDA, greater individual variability in NDA also related to a higher level of depressive symptoms (p< .05).

Conclusions: Findings suggest the feasibility of EMA within active cancer caregivers: enrollment for this study exceeded typical recruitment rates for studies of cancer caregivers, the percentage of prompt completion was comparable to other types of EMA studies, and caregivers found overall burden of completing surveys to be acceptable. Findings suggest that level and variability of affect in daily life are associated with depressive symptoms in cancer caregivers, pertinent to the development of event contingent interventions (e.g., just-in-time adaptive interventions) to address depression in this vulnerable population.

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CITATION AND MERITORIOUS AWARD WINNER
Paper Session 3 11:30 AM-11:45 AM

THE LONGITUDINAL RELATIONSHIP BETWEEN IMMUNE CELL PROFILES AND FRAILTY IN PATIENTS WITH BREAST CANCER RECEIVING CHEMOTHERAPY

Nikeshia J. Gilmore, PhD¹, Lianlian Lei, MS², Eva Culakova, PhD, MS³, Mostafa Mohamed, MBBS², Allison Magnuson, DO², Ronald Maggiore, MD², Elizabeth Belcher, PhD², Melissa (Kah Poh) Loh, MD², Alison Conlin, MD⁴, Lora Weiselberg, MD⁵, Mary Ontko, RN⁶, Supriya Mohile, MD, MS², Michelle C. Janelins, Ph.D., M.P.H.³

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Background: Frailty is an important factor for oncologists in determining risk of chemotherapy toxicity. Immune cells involved in inflammatory processes are physiologic features of frailty. Its role and clinical relevance to identify patients at risk of developing frailty with chemotherapy is not fully understood.

Methods: Patients had stage I-III breast cancer (n=583, mean age 53; range 22-81). Measures were completed pre-chemotherapy (T1; ≤ 7 days before first cycle), post-chemotherapy (T2; ≤ 1 month after last cycle), and 6-months post-chemotherapy (T3). Frailty was assessed by a modified Fried score (0-4) using self-reported measures (weakness, exhaustion, physical activity, and walking speed) at T1, T2, and T3. Immune cell counts as well as neutrophil:lymphocyte ratio (NLR) and lymphocyte:monocyte ratio (LMR) were obtained T1 and T2. Separate linear regressions were used to evaluate the associations of T1 cell counts with T1, T2, and T3 frailty and change in cell counts (T2-T1) with T2 frailty and change in frailty [(T2-T1) and (T3-T1)]. We controlled for relevant covariates and T1 frailty.

Results: In this secondary analysis the mean frailty score increased from T1 to T2 (1.3 vs 2.0; p< 0.001) and returned to T1 levels by T3 (1.3 vs 1.3; p=0.8). T1 compared to T2, showed an increase in NLR (3.0 vs 5.0; p< 0.001) and decreased lymphocytes (1.9 vs 1.2; p< 0.01), white blood cells (WBC: 7.4 vs 6.6; p< 0.001), and LMR (5.7 vs 2.8; p=0.04). There was no change in levels of neutrophils. T1 WBC (β=0.04; p< 0.01), neutrophils (β=0.04; p< 0.01), and NLR (β=0.05; p< 0.01) were associated with T1 frailty. From T1 to T2, greater increase in immune cells was associated with frailty (WBC: β=0.2; p< 0.01, neutrophils: β=0.3; p< 0.01, NLR: β=0.03; p< 0.01) and greater changes in frailty (WBC: β=0.2; p< 0.01, neutrophils: β=0.3; p< 0.01, NLR: β=0.03; p< 0.01). These associations remained significant after controlling for the receipt of growth factors with chemotherapy. In all models higher T1 frailty, older age, and being unmarried were predictive of T2 frailty and change in frailty score. There were no associations between T1 and change in (T3-T1) immune counts with T3 frailty or change in (T3-T1) frailty.

Conclusions: In patients with breast cancer undergoing chemotherapy, immune cell counts are associated with frailty. Immune cell counts may help clinicians identify patients at risk of frailty during chemotherapy. Additional research is needed to identify the specific immune subsets associated with frailty in patients with breast cancer receiving chemotherapy.

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Paper Session 4

10:45 AM–11:00 AM

ADVANCING HEALTH INTERVENTIONS THROUGH ECOLOGICAL BEHAVIORAL OBSERVATION: NEW FRONTIERS FOR INTERVENTION SCIENCE

Deanna M. Kaplan, M.A.¹¹University of Arizona, Providence, RI

Advances in ambulatory assessment technologies facilitated a paradigm shift in behavioral medicine – it is now possible to study health processes and outcomes as they naturally occur during normal daily life. The Electronically Activated Recorder or EAR (Mehl et al., 2001; Mehl, 2017; Kaplan et al., under review) is an ecological behavioral observation method that is increasingly used to answer novel questions about the relationships between everyday behaviors and health. The EAR is a small digital audio recorder worn by participants as they go about their daily lives. It silently and periodically records the sounds of participants' lives that are then quantified through behavioral coding and transcription of speech. In the domain of behavioral medicine, the EAR has been recognized for its utility in psychosomatics (Mehl, Robbins, & Deters, 2012), and has been used, for example, in the study of how couples cope with breast cancer (Robbins, Lopez, Weihs & Mehl, 2014).

Surprisingly, ecological behavioral observation has not yet been applied to behavioral medicine interventions. Given that most behavioral medicine interventions have the explicit goal of creating sustained behavior changes in patients' actual daily lives, methods such as the EAR offer promising new frontiers in the study of health behavior change interventions. This presentation outlines the utility of ecological behavioral observation for: 1) identifying novel daily life intervention targets in populations with chronic diseases, 2) evaluating the efficacy of new intervention approaches on actual behavior change, 3) enabling mechanistic research about the most effective ingredients of interventions with established efficacy, 4) yielding advances in basic science when used in combination with other ambulatory assessment methods (e.g., ecological momentary assessment, ambulatory physiology). This methodologically-focused presentation will draw upon new data from the first application of the EAR method to a clinical intervention study, an RCT of the effects of mindfulness and compassion meditation interventions. Although this was a “nearly null trial” (ClinicalTrials Identifier NCT01643369, manuscript in preparation) in that the interventions tested had minimal effects across all health and psychological outcomes assessed, this first application of the EAR to an intervention study has illustrative implications for how to apply ecological behavioral observation to behavioral medicine intervention science.

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Paper Session 4

11:00 AM–11:15 AM

WHICH METHOD OF ASSESSING DEPRESSION & ANXIETY BEST PREDICTS CESSATION: SCREENING INSTRUMENTS OR SELF-REPORTED CONDITIONS?

Noreen L. Watson, PhD¹, Jaimee L. Heffner, PhD¹, Kristin E. Mull, MS¹, Jennifer McClure, PhD², Jonathan Bricker, PhD³¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²Kaiser Permanente Washington Health Research Institute, Seattle, WA; ³Fred Hutchinson Cancer Research Center/University of Washington, Seattle, WA

Background: Mental health conditions (MHCs; e.g., depression, anxiety) are common among smokers and associated with difficulty quitting smoking. However, it is unknown which method of assessing depression and anxiety best predicts cessation in the context of smoking interventions. Thus, among treatment-seeking smokers, we aimed to assess and compare the predictive utility of two common assessment approaches—screening instruments for depression and anxiety or self-reporting a depression and/or anxiety (D/A) condition. Among those who self-report D/A, we also examined if asking whether they believe the condition(s) will interfere with their ability to quit added predictive utility.

Methods: At baseline, participants (N=2,637) enrolled in a RCT of web-based smoking treatments completed screening instruments for 5 common MHCs (depression, social anxiety, PTSD, generalized anxiety, panic) and a two-part question asking about self-reported D/A and interference beliefs. Outcomes were 12-month self-reported 30-day point prevalence abstinence. Logistic regression models determined the association of each MHC index with cessation; area under the receiver operating characteristic curves (AUCs) were used to compare their ability to predict cessation.

Results: Quit rates ranged from 13% among smokers who self-reported D/A and believed it would interfere quitting to 29% among those who did not screen positive for any MHC assessed. Among those who screened positive for a MHC, quit rates ranged from 23% (panic) to 25% (generalized & social anxiety). Screening positive for depression (OR=0.78; 95% CI: 0.62, 0.98; p=.032), panic disorder (OR=0.73; p=.009), or PTSD (OR=0.78; p=.034) was associated with a significantly lower likelihood of cessation, as was self-reporting D/A (OR=0.61; p<.001) and interference beliefs (OR=0.39; p<.001). No significant differences were found between the AUC values for the screening instruments and single-item self-report question. The highest AUC value was for the two-part self-reported D/A and interference beliefs question (AUC=.578; 95%CI: 0.55, 0.60); it was significantly greater than the AUC for the single-item self-report of D/A (p=.042).

Conclusions: Relative to multi-item screening assessments for common MHCs, both self-reporting a D/A condition and a two-part question assessing self-reported D/A conditions and beliefs about the condition(s) interfering with quitting are at least as useful, and possibly more useful, for identifying those at highest risk for failing to quit. These shorter assessment approaches can yield information to guide treatment-related decisions.

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Paper Session 4

11:15 AM-11:30 AM

RELIABILITY AND MODALITY EQUIVALENCY OF ELECTRONICALLY ADMINISTERING THE NEWEST VITAL SIGN TO MEASURE CHILD HEALTH LITERACY

Hannah G. Lane, PhD, MPH¹, Bridget Armstrong, PhD², Erin R. Hager, PhD³, Amy Zemanick, BA³

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Background: The relationship between health literacy and preventative health behaviors is well-established in adults; however it remains understudied in children. This is largely because few age-appropriate measures can be easily administered in non-clinical settings (e.g. schools) that children commonly frequent. This study investigates the reliability and modality equivalency of a low-burden, electronic administration of the Newest Vital Sign (NVS), a validated tool commonly administered to children in clinical settings, compared to the gold standard oral administration.

Methods: 137 students from 13 low-income elementary and middle schools were enrolled as part of a larger randomized trial. Students completed the electronic and oral NVS during school, one week apart, in random order. The instrument contains 5 questions about a nutrition label, which are scored as correct or incorrect. To establish test-retest reliability, Spearman correlations and percent agreement were assessed for both continuous score (0-5) and previously established risk categories (0-1: likely low health literacy, 2-3: possibly limited health literacy, 4+: likely adequate health literacy). Item Response Theory (IRT) was used to calibrate the difficulty of the 5 test items across the electronic and oral NVS versions. Differential item functioning (DIF) tests assessed discrepancies in items' representativeness of the latent construct of health literacy.

Results: The sample was 62.0% female, 53.3% elementary school, and ranged in age from 8-14. Mean scores for oral NVS (1.28, SD=1.38) were significantly higher than electronically administered NVS (0.73, SD=1.19) ($t(136) = -6.27, p < .01$). According to risk categories, the oral and electronic NVS indicated that 63.5% and 81.0% of student were at high risk for likely low health literacy, respectively. Spearman's rho values were adequate and significant ($p < 0.001$) for both the continuous ($r=0.63$) and categorical ($r=0.56$) scoring. Percent agreements were 85.3% and 73.0%, respectively. IRT difficulty parameters were satisfactory, and none of the five items had significant DIF.

Conclusions: Findings indicate good agreement and construct consistency between the electronic and oral NVS, suggesting that the measures are comparable in assessing health literacy; however, scores were consistently higher with the oral administration. The high prevalence of low health literacy in this sample also highlights the need to understand and address health literacy in non-clinical samples. Minimizing administration burden by using the electronic NVS enables health literacy to be assessed among large samples of children, in order to better describe patterns and disparities and to inform non-clinical preventative health interventions grounded in health literacy.

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Paper Session 4

11:30 AM-11:45 AM

ECOLOGICAL MOMENTARY ASSESSMENT VERSUS STANDARD SELF-REPORT MEASURES OF INSOMNIA SYMPTOMS AMONG COLLEGE STUDENTS

Emily P. Midgette, BA¹, Matthew C. Whited, Ph.D, Licensed Psychologist¹, Jordan M. Ellis, MA², Alexander J. Capiaghi, BS¹, Alexander M. Schoemann, PhD¹, Ashley M. Griffith, MA³, Hunter M. Davis, Psychology¹

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Introduction: Sleep disturbances are prevalent and increasing among college students, with as many as 73% reporting at least occasional sleep difficulties and 50% reporting difficulty staying awake throughout the day. Previous findings suggest that a minimum of 7.7% of students suffer from insomnia. Insomnia has a considerable impact on students' ability to succeed in college and is significantly associated with mental health problems including chronic fatigue, depression, increased stress and anxiety, and lower quality of life. As mobile data capture tools are becoming more proliferate in clinical research of college student health, it is important to investigate the performance of patient-reported measures of sleep quality as they relate to real-time measurement of symptoms.

Method: Participants completed the Insomnia Severity Index (ISI) to assess for insomnia symptoms over the past two weeks. Ecological momentary assessment (EMA) was then used to assess perceived sleep quality, daytime sleepiness, and stress as experienced in-the-moment, using a smartphone-based EMA application. Participants ($N = 153$) were asked to respond to questions regarding their subjective sleep quality each morning upon awakening for 7 days. Daytime sleepiness and stress were assessed twice daily (afternoon and evening). This technique allows for assessing sleep quality and daytime dysfunction over one full week to compare baseline insomnia symptoms to day-to-day sleep disturbances. Daily ratings were aggregated across 7 days, and ISI scores were then used to predict the aggregated sleep disturbance scores in linear regression models.

Results: Results found that there was a statistically significant within-subjects association between baseline insomnia symptoms and momentary sleep quality ($B = 0.350, p < 0.001$), duration ($B = -0.108, p < 0.001$), latency ($B = 0.380, p < 0.001$) and perceived difficulty falling asleep ($B = 0.337, p < 0.001$), and restfulness upon awakening ($B = -0.370, p < 0.001$). Within-subjects associations between baseline insomnia symptoms and perceived stress levels ($B = 0.221, p < 0.001$) and sleepiness ($B = 0.282, p < 0.001$) throughout the day were also observed.

Discussion: The results indicate that baseline insomnia symptoms are associated with daily self-reported sleep difficulties. Our findings suggest that momentary measures of sleep difficulties are associated with traditional retrospective self-report measures which supports their validity. However, some variables were associated less strongly, indicating that they provide slightly different information about sleep and sleep quality. Future research should further investigate momentary measures of sleep by comparing them to objective measures of sleep.

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Paper Session 5

10:45 AM–11:00 AM

ARE SALAD BARS ASSOCIATED WITH BETTER NUTRIENT INTAKE DURING LUNCH? A PLATE WASTE ANALYSIS AMONG TITLE I ELEMENTARY SCHOOLS

Elizabeth L. Adams, PhD¹, Laura M. Thornton, N/A², Hollie Raynor, PhD, RD³, Suzanne E. Mazzeo, PhD¹, Melanie K. Bean, PhD¹¹Virginia Commonwealth University, Richmond, VA; ²University of North Carolina at Chapel Hill, RICHMOND, VA; ³University of Tennessee, Knoxville, TN

Background: The Healthy, Hunger-Free Kids Act (HHFKA) implemented changes to the National School Lunch Program (NSLP) in 2012. Salad bars are widely promoted as a strategy for schools to meet these HHFKA guidelines. It is unknown if access to salad bars is associated with better nutrient intake among low-income children at high risk for obesity. We quantified nutrient selection and consumption among children participating in the NSLP in schools with and without salad bars and compared these values to nutrient recommendations.

Methods: Six Virginia Title I elementary schools with 100% free meals were randomly selected. Schools were matched and paired based on minority enrollment and lunchroom environment; half the schools had salad bars, half did not. Students participating in the NSLP were eligible (92.5% participation; 1st–5th graders; 98.6% racial/ethnic minorities). Digital imagery plate waste methods were used to quantify children's lunch selection and consumption on a single school day (N=1,115 trays rated). Nutritional information for reference portions of school lunch items were analyzed using Nutrition Data Systems for Research. Nutrition information was used to quantify children's nutrient intake (e.g., Ca, Na, Fe) and compare this to the 2012 HHFKA and 2009 Institute of Medicine nutrient recommendations. Schools with salad bars vs. control schools were compared based on percent of students meeting nutrient recommendations using multilevel models.

Results: On average, children's lunch selection comprised 552.0±128.3 kcal, of which 315.9±170.3 kcal were consumed. Most students met consumption recommendations for protein (57.1%) and Na (96.7%). Few met recommendations for fiber (7.5%), Fe (12.5%), and Ca (16.3%); had students consumed their full lunch selection, 49–64% would have met recommendations for these nutrients. Recommendations for vitamins A and C were met by 24.2% and 33.7% of students, respectively; 57% and 46% would have met recommendations if they had consumed their full lunch selection. Based on consumption, more children met Fe recommendations in schools with salad bars than in schools without (14.9% vs. 10.4%; p=.01); no differences between salad bar groups were found for total energy, Ca, fiber, and Na (all p's >.05). Significant interactions were found between salad bar group and matched pair in the percentage of children who met recommendations for protein and vitamins A and C.

Conclusion: Percent of students meeting nutrient recommendations for schools with vs. without salad bars was variable and may depend on the types of foods served or school-level factors not assessed. Across all schools, efforts to increase children's consumption of selected foods and beverages should be explored as an avenue for increasing the percentage of children who meet these nutrient recommendations.

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CITATION AND MERITORIOUS AWARD WINNER
Paper Session 5 11:00 AM–11:15 AM

HARNESSING SENSOR TECHNOLOGY AND MACHINE LEARNING TO PREDICT DIETARY LAPSES IN A WEIGHT LOSS PROGRAM

Rebecca J. Crochiere, B.A.¹, Evan M. Forman, PhD², Zoe Zhang, PhD², Adrienne Juarascio, Ph.D.²¹WELL Center, Drexel University, Philadelphia, PA; ²Drexel University, Philadelphia, PA

Over 160 million American adults have overweight/obesity, but inability to consistently adhere to a weight loss (WL) diet, i.e., dietary lapse, undermines these individuals' WL efforts. Research has identified specific momentary factors that increase risk of lapse, which can be used to estimate lapse risk and inform interventions that provide support when risk is high (e.g., just-in-time adaptive interventions; JITAIs). These risk factors have typically been measured via ecological momentary assessment (EMA; a data collection method that involves completing multiple brief surveys throughout the day, usually via a smartphone). Yet EMA has several notable shortcomings, including participant burden, self-report bias, poor compliance, and restricted data collection periods (i.e., only collecting data at times when participants complete surveys). Passive sensors, which can automatically, objectively, and continuously measure lapse risk factors, offer discrete advantages over EMA. However, no study has evaluated whether sensor-measured risk factors can predict dietary lapse.

This study investigated whether lapses could be predicted through sensor-measured variables among 24 adults with overweight/obesity enrolled in a 6-week commercial WL program. Participants wore a Fitbit (accelerometer) at all times, completed EMA surveys, and enabled a GPS app that continuously tracked location. Sensor-measured risk factors were physical activity and sleep (measured via accelerometer), geolocation (measured via GPS), and time (measured via clock). EMA was used to measure lapses and categorize GPS coordinates into geolocations. A supervised binary classification model was used to predict lapses based on values of the risk factors at various time granularities (e.g., 5-, 15-, 30-, 60-, and 90-minutes prior to the lapse).

Participants reported low burden of sensors and 98.6% of all possible sensor data was acquired. Further, using only this limited suite of sensors, a machine learning model predicted lapses with 64% sensitivity (true prediction rate of lapse) and 68% specificity (true prediction rate of non-lapse). Findings highlight the promise of sensors as a more acceptable and accurate method by which to measure risk factors, laying the groundwork for sensor-powered JITAIs. Importantly, as sensor technology continues to improve, increasing types of sensors and combinations of sensors will be able to measure additional risk factors and lapses, which will further increase lapse prediction accuracy.

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MERITORIOUS AWARD WINNER

Paper Session 5

11:15 AM-11:30 AM

IS THIS PATIENT FOLLOWING THE RECOMMENDED DIET? VALIDITY AND RELIABILITY OF A 3-ITEM DIETARY STAGE OF CHANGE QUESTIONNAIRE

Lindsey D. Pappalardo, BA¹, Andrew Nicholson, MSPH², Binhuan Wang, PhD³, Sangmin Hyoung, EdM⁴, Sundar Natarajan, MD, MSc³

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Background: Hypertension is the most common chronic condition affecting Americans. The Dietary Approaches to Stop Hypertension (DASH) diet can reduce systolic blood pressure (BP) by approximately 8 mmHg, i.e. equivalent to a potent BP-lowering drug. Providers routinely recommend diet modification to patients but assessing diet is difficult, especially in busy clinical settings.

Objective: To assess the validity and reliability of a 3-item dietary stage of change (DSOC) questionnaire used in a successful behavioral intervention trial to control BP.

Methods: The DSOC questionnaire assessed participant readiness to adhere to the DASH diet based on Transtheoretical stages of change. Action and Maintenance stages indicate current adherence. The Willett Food Frequency Questionnaire (FFQ) was used to calculate DASH adherence score. Dietary sodium intake, a critical part of the DASH diet, was assessed using urine sodium/creatinine ratio (UNa/UCr). We evaluated criterion validity by assessing if DSOC is related to DASH scores in total (Kruskal-Wallis test) and by domain (Wilcoxon Mann-Whitney test). Spearman's Correlation (Rho) was used to evaluate the following: Convergent validity by comparing DSOC to UNa/UCr, discriminant validity by comparing DSOC to Psychosocial Support for Exercise Participation, and test-retest reliability by comparing baseline data to 3-month follow-up within the control group.

Results: At baseline (n = 533), more advanced dietary stages of change were associated with higher DASH adherence scores (Kruskal-Wallis $p < 0.0001$). Participants in adherent stages had higher DASH scores in total (Rho 0.34, $p < 0.0001$) and by domain (all $p < 0.05$). Baseline DSOC was associated with UNa/UCr (Rho - 0.11, $p = 0.019$), and not associated with Psychosocial Support for Exercise Participation (Rho 0.05, $p = 0.25$). Finally, baseline DSOC was correlated with 3-month DSOC within the control group (Rho 0.21, $p = 0.0087$).

Conclusions: DSOC is a valid and reliable measure for assessing adherence to the DASH diet. This short survey can swiftly categorize patients into stages, and as adherent or non-adherent, even in busy clinical settings. It is an alternative to more time-consuming dietary assessments. Furthermore, DSOC questions can be easily administered by phone or in person, which can facilitate the implementation of remote dietary interventions.

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Paper Session 5

11:30 AM-11:45 AM

AUGMENTING SELF-REPORTS WITH WEARABLE VIDEO CAMERA DATA TO IMPROVE DIET-RECALL

Erin R. Bruns, n/a¹, Annie W. Lin, PhD, RD², Rawan Alharbi, n/a², Sougata Sen, PhD³, Josiah Hester, PhD³, Nabil Alshurafa, PhD²

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The 24-hour diet recall is commonly used to track dietary intake yet has many limitations, including the reliance on memory and subjective reporting. Understanding which food items are commonly forgotten during a recall can improve the dietitian's ability to trigger a person's memory and thus, the accuracy of the 24-hour diet recall. The purpose of the BeYourself Study was to conduct an in-the-wild experiment to track participants' diet using a fish-eye lens camera strapped around their non-dominant shoulder for 2 weeks and compare against daily 24-hour diet recalls. A registered dietitian conducted 24-hour diet recalls during the study. Fifteen participants (9 obese, 3 overweight and 3 normal BMI) collectively recorded 650 hours of video data and participants completed at least 9 days of recalls. A trained video annotator labeled 514 food items consumed by participants and identified foods that were observed in the video but not the recalls. The missing items were categorized into nine major food groups using the Nutrition Coordinating Center (NCC) Major Food Group Serving Count System by a registered dietitian. There were 87 (17%) food items that were missing from the recalls but were captured by video. On average, a participant missed reporting 5.8 +/- 3.8 items in their recalls over a 2-week period. Grain-based foods were the most commonly forgotten items (21.6%), followed by the following groups: Beverages (17.0%), Dairy and Non-Dairy Alternatives (11.4%), Fruits (9.1%), Meat, Fish, Poultry, Eggs, Nuts, Seeds, and Meat Alternatives (6.8%) and Sweets (6.8%), Miscellaneous (5.7%) and Vegetables (5.7%), and Fats (1.4%). Results from this study suggest that data collection using 24-hr diet recall improves when used with video, and will inform the development of a higher definition camera to capture more precise dietary intake data to aid in diet quality assessments.

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Paper Session 6

10:45 AM–11:00 AM

COLLEGE PRESCRIPTION OPIOID MISUSE: AN EXPLORATION OF SOCIAL LEARNING, SOCIAL CONTROL, AND STRAIN THEORIES

Julie L. Murray, MS¹, Scott DeBerard, Ph.D.¹, Kala Randazzo, BS¹¹Utah State University, Logan, UT

Prescription opioids, when used as medically intended, can be effective in pain management. However, the consequences and costs of widespread misuse of prescription opioids in the United States are cause for concern. Prescription opioids are related to increased morbidity and mortality. Young adults, between the ages of 18 and 25 have the highest rates of misuse nationally and within this age group, college students may be particularly at risk due to the unique demands and environment of college. Relatively few studies have examined prescription opioid misuse in this population, and even fewer have done so through a theoretical lens. In order to effectively curb the growing misuse of prescription opioids within college populations, we must first have a better understanding of the factors that potentially lead to misuse. The purpose of the present study was to examine whether predictors from social learning, social control, or strain theories could explain prescription opioid misuse within a national sample of undergraduate students from four year universities in the United States and to examine which of the three theories provides the strongest explanation of prescription opioid misuse within this population. A national sample of 616 undergraduates (80% female; 54% non-white) completed a web-based survey designed to assess prescription opioid misuse and identify predictors from social learning, social control, and strain theories. Results showed that 17% of the sample had engaged in lifetime prescription opioid misuse. Logistic regression analyses indicated that variables related to social learning and strain theories, including associating with peers who engage in substance use/misuse, perceived parental attitudes towards prescription misuse, and depression, were significant predictors of prescription opioid misuse, whereas the measures of social control theory were not. An exploratory model combining demographic variables with variables across the three theoretical models was created in order to optimize prediction success. Overall predictive success of the exploratory model was 86.5% with a sensitivity and specificity of 36.2% and 96.9%, respectively. The stunning implications of this degree of prescription opioid misuse among college students and possible ways to mitigate this challenge are discussed.

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CITATION AND MERITORIOUS AWARD WINNER
Paper Session 6

11:00 AM–11:15 AM

‘TWO PEOPLE OVERDOSE A DAY HERE’: A QUALITATIVE STUDY EXPLORING SOLUTIONS FOR OPIOID OVERDOSES AT A PUBLIC LIBRARY

Melanie J. Nicholls, LCSW¹, Lianne A. Urada, PhD, LCSW²¹SDSU/UCSD, La Jolla, CA; ²San Diego State University & University of California San Diego, La Jolla, CA

Introduction: In 2018, California experienced 2,311 deaths from opioid overdose, 743 deaths related to fentanyl overdose alone, and these numbers continue to rise nationwide. Southern California is a gateway for fentanyl distribution to the rest of the country. Recently, there has been an increase in substance use and opioid overdoses at public libraries, which are easily accessible public places for those struggling with homelessness. This study aimed to explore the barriers unstably housed people who use substances face in getting help and what innovative solutions the library and its community and research partners might offer.

Methods: From January–June 2019, researchers surveyed 50 library patrons experiencing homelessness and 10 library staff at a large Southern California library. Participants were also either interviewed in-depth (n=31) or participated in a focus group (n=29). Patrons were recruited through fliers via a university-library partnership and consensus organizing

Methods: Sociodemographic data were collected via self-administered surveys. Data were coded and analyzed using a thematic analysis. Coders independently coded text files for data analysis and discussed codes until agreement and inter-coder reliability was reached.

Results: Library patrons were a mean age of 44, (range: 18–75). Approximately half were white (47%) and male (51%). 63% of participants reported housing instability; 22% lived in shelters. About half reported a current or prior substance use history. Participants suggested the library could offer education on the effects and health risks of drugs, fentanyl awareness, and overdose prevention, and connect patrons to treatment resources, e.g., medically assisted treatment (MAT), and Narcan. Findings suggest that barriers to quitting are related to a lack of access to MAT and detox and low knowledge of services for those struggling with opioid addiction.

Conclusion: Public libraries are perceived as one of the few places persons living with homelessness and opioid addiction can safely rest at during the day. Patrons often engage in substance use at the library due to its availability of clean water and bathrooms, leading to an increase in overdoses. Public libraries present an opportunity to provide linkage to care to treatment and education for patrons struggling with substance use.

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CITATION AWARD WINNER

Paper Session 6

11:15 AM-11:30 AM

THE TRUTH ABOUT OPIOIDS: A NATIONAL CAMPAIGN TO PREVENT PRESCRIPTION OPIOID MISUSE IN YOUNG ADULTS

Elizabeth C. Hair, PhD¹, Jessica M. Rath, PhD, MPH, CHES¹, Alexa R. Romberg, PhD¹, Alexis A. Barton, PhD, MS¹, Donna Vallone, PhD, MPH¹

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Using mass-media to influence health-related behavior can be extremely efficient, given the size of the potential audience and the increasing rates of media usage across multiple devices. The national, anti-tobacco mass-media campaign, *truth*, is uniquely positioned to address the growing opioid crisis using similar strategies to those employed for the national anti-tobacco media campaign since 2000. This study aimed to understand *truth's* role in a mass-media opioid misuse prevention campaign, determine measures, and test ad concepts to change attitudes around risk perceptions and misuse/abuse of opioids.

Campaign development data was collected from over 6,000 young adults ages 15-34. Initial online surveys assessed knowledge of the epidemic and attitudes regarding misuse. Forced exposure studies tested concepts and polished advertisements through focus groups, surveys, and online discussion boards to understand ad effectiveness for message communication and emotional response.

Surveys to evaluate ad effectiveness were disseminated before launch and six months after launch. Questions were asked about participants' attitudes toward those with opioid addiction, importance of the ad message, and likelihood of seeking more information about the opioid epidemic.

Formative research results indicated a clear need for education. Among the youth and young adults interviewed, results found that leftover prescriptions were often sold or given away with no stigma attached. The target audience saw *truth's* brand as a natural fit to take on the issue of the opioid crisis. Ad testing narrowed down concepts and revealed a need for a call to action and message of hopefulness.

The in-field testing revealed that, relative to pre-launch levels, at six months post launch respondents who had seen the ads were 25% more likely to endorse de-stigmatizing statements such as "someone like me could become dependent on prescription opioids" and were 72% less likely to claim that misusing prescription opioids carried no risk of harm. We also saw a 20% increase over baseline in the reported likelihood to "Talk to a friend or loved one about their prescription opioid use."

truth's anti-opioid campaign's long-term goal is to change attitudes around opioid misuse and risk in order to decrease intention to misuse prescription opioids and decrease stigmatizing attitudes toward those suffering from addiction.

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Paper Session 6

11:30 AM-11:45 AM

SENSE OF PURPOSE IN LIFE AND LOWER LIKELIHOOD OF FUTURE DRUG MISUSE

Eric S. Kim, PhD¹, Carol D. Ryff, PhD², Afton L. Hassett, PsyD³, Chad Brummett, MD³, Vic Strecher, PhD⁴

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Objective: In the United States, 28.6 million people used illicit drugs or misused prescription drugs in the last 30 days. Thus, identifying factors linked with lower likelihood of future drug misuse are important targets for research and practice. Sense of purpose in life has been linked with better behavioral and physical health outcomes. Further, a higher sense of purpose may reduce likelihood of drug misuse because it has been linked with several protective factors including: enhanced ability to handle stress, higher pain tolerance, and lower impulsivity. However, the association between sense of purpose and drug misuse has been understudied. Thus, we tested whether people with a higher sense of purpose at baseline had a lower likelihood of future drug misuse 9-10 years later. We also tested whether people with a stronger sense of purpose were less likely to cope with stress by misusing drugs (a potential underlying mechanism) in a separate cohort.

Methods: This study included 3,535 middle-aged adults from the Midlife in the United States Study (MIDUS) who were not misusing drugs at baseline. Using multiple logistic regression models, we prospectively assessed whether purpose in life was associated with risk of misusing drugs 9-10 years later. This study also included 498 older adults from the Health and Retirement Study (HRS). Using multiple logistic regression models, we cross-sectionally assessed whether purpose in life was associated with risk of coping with stress by misusing drugs.

Results: Among respondents not misusing drugs at baseline in the MIDUS sample, people in the highest quartile of purpose (versus lowest quartile) had 50% lower odds (95% CI:0.31-0.83) of future drug misuse in a demographic-adjusted model. Among HRS respondents, people in the highest purpose quartile (versus lowest quartile) had 76% lower odds (95% CI: 0.10-0.57) of misusing drugs to cope with stress in a demographic-adjusted model. In both sets of analyses (in MIDUS and HRS), associations remained evident after additionally adjusting for psychological distress, baseline health, and health behaviors.

Conclusions: A growing number of studies suggest that a sense of purpose can be increased. With additional research, purpose may emerge as a novel target for drug misuse prevention and intervention efforts.

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Paper Session 7

10:45 AM–11:00 AM

BODY IMAGE, INTIMATE RELATIONSHIPS, AND SEXUAL HEALTH AMONG GENDER MINORITY YOUTH: A QUALITATIVE STUDY

Allegra R. Gordon, ScD, MPH¹, Rose Eiduson, MPH², Gabriel R. Murchison, MPH³, Madina Agénor, ScD, MPH⁴¹Boston Children's Hospital, Harvard Medical School, Boston, MA; ²Boston Children's Hospital, Jamaica Plain, MA; ³Harvard University, Brighton, MA; ⁴Tufts University, Medford, MA

Background: Gender minority (GM; e.g., transgender, gender non-binary) youth experience substantial sexual health inequities compared to their non-GM peers. These inequities may be driven by exposure to social stressors including stigma and violence, which can negatively impact body image and relationship power, both of which have been linked to adverse sexual health outcomes in non-GM youth. Yet little is known about the role of body image and intimate relationships in reducing or exacerbating sexual health risk factors among GM youth.

Methods: We conducted 30 in-depth interviews with GM young people (18–28 years) in the U.S. Northeast (gender identity: transgender women=8, transgender men=5, non-binary=17; race/ethnicity: White=18; Multiracial=5; Black n=4; Latinx=2; Asian=1). Interviews were transcribed, double-coded, and analyzed using a template-organizing style guided by a gender affirmation framework.

Results: Participants described several ways body image was related to intimate relationships, with implications for sexual health. We identified three themes. (1) Gender dysphoria and experiences with transphobia, racism and fatphobia affected body image and impeded sexual intimacy and perceived sexual decision-making power (i.e., the ability to communicate about sexual desires and/or make decisions about sexual activities) for several participants, and these experiences varied by gender identity. (2) Experiences with sexual violence were common, representing a profound barrier to both positive body image and to sexual health and wellbeing. (3) Multiple forms of resilience enabled participants to cultivate body appreciation and develop a sense of sexual decision-making power—particularly in the context of gender affirming romantic and sexual relationships (e.g., in which partners supported gender identity exploration, used affirming language for body parts and sexual activity, and engaged in dialogue about sexual health decisions such as barrier use for STI prevention).

Implications: In this formative study we identified critical connections between body image, intimate relationships, and sexual health risk factors among diverse GM youth. Sexual health promotion interventions should account for the role of body image and intimate relationships and should build on within-community resilience resources, including the experiences of those in supportive sexual/romantic relationships, in order to better meet the needs of this under-served population.

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Paper Session 7

11:00 AM–11:15 AM

DIFFERENT TYPES OF HIV STIGMA AND MEDICATION ADHERENCE: THE MECHANISTIC ROLES OF ART KNOWLEDGE AND ADHERENCE SELF-EFFICACY

Chengbo Zeng, MPH¹, Xiaoming Li, PhD¹, Shan Qiao, PhD¹, Xueying Yang, PhD¹¹University of South Carolina, Columbia, SC

Background: Previous studies have demonstrated the negative relationship between HIV-related stigma and medication adherence among people living with HIV (PLWH). Yet, little is known about the relationships between different types of stigma (i.e., perceived community stigma, internalized stigma, and enacted stigma) and medication adherence. Additionally, there is few studies investigating the mechanisms through which types of stigma affect medication adherence. Based on the information-motivation behavioral skills (IMB) theory, the current study proposed that different types of stigma could impair medication adherence through their negative influences on ART knowledge and adherence self-efficacy. This study aimed to examine the mechanistic roles of ART knowledge and adherence self-efficacy on the relationships between different types of stigma and medication adherence.

Method: Data were derived from a baseline data of a prospective cohort study. Data collection was conducted from November 2017 to February 2018 in Guangxi, China. Six hospitals/clinics in five cities with the largest number of HIV patients were selected, and 1,198 PLWH were recruited. Participants were assessed on sociodemographic characteristics, medication adherence, different types of stigma (i.e., perceived community stigma, internalized stigma, and enacted stigma), ART knowledge, and adherence self-efficacy. Path analysis was used to examine the indirect paths from different types of stigma to medication adherence through ART knowledge and adherence self-efficacy.

Results: Among the 1,198 PLWH, 64.4% were male, and mean age was 39.4 years. The indirect paths from internalized stigma to medication adherence through ART knowledge (Std.β=-0.013, 95%CI: -0.004~0.000, p=0.049) and adherence self-efficacy (Std.β=-0.033, 95%CI: -0.008~0.003, p< 0.001) were statistically significant. Perceived community stigma could only affect medication adherence through adherence self-efficacy (Std.β=-0.012, 95%CI: -0.003~0.000, p=0.015) but not through ART knowledge (Std.β=-0.001, 95%CI: -0.001~0.000, p=0.526). There were no significant indirect effects from enacted stigma to medication adherence through ART knowledge (Std.β=-0.004, 95%CI: -0.005~0.000, p=0.213) and adherence self-efficacy (Std.β=-0.009, 95%CI: -0.008~0.000, p=0.07).

Conclusion: The mechanistic roles of ART knowledge and adherence self-efficacy are different in the relationships between different types of stigma and medication adherence. To improve medication adherence among PLWH, tailored interventions focusing on different types of stigma are warranted. Health education on increasing ART knowledge and resilience based intervention on improving adherence self-efficacy can also alleviate the negative influences of stigma on medication adherence.

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CITATION AWARD WINNER

Paper Session 7

11:15 AM-11:30 AM

SEXUAL MINORITY IDENTITY AND DEPRESSION AMONG U.S. YOUNG ADULTS: POTENTIAL MEDIATING ROLE OF NEGATIVE SOCIAL MEDIA EXPERIENCES

Cesar G. Escobar-Viera, PhD, MD¹, Ariel Shensa, MA¹, Michael Marshal, PhD²¹University of Pittsburgh, Pittsburgh, PA; ²University of Southern California, Pittsburgh, PA

Introduction: Sexual minority young adults (SMYA) face higher risk of depression compared to their heterosexual peers. Minority stress theory posits that experiences of rejection and discrimination might influence these outcomes. While social media (SM) is a key source for connecting and finding support among SMYA, it may also be a source of negative (rejection- and discrimination-related) SM experiences among SMYA. No study has explored whether these negative SM experiences influence mental health among SMYA. We sought to fill this gap by assessing a potential indirect path via negative SM experiences in the association between sexual minority identity and depression among a national sample of U.S. young adults.

Methods: Online survey among 2,408 adults ages 18-30. We categorized sexual orientation in lesbian, gay, and bisexual (LGB) and non-LGB. We assessed negative SM experiences with four Likert-scale items covering different types of negative interactions. Answers were averaged to create a continuous scale from 1 'never' through 5 'more often than once a week.' We assessed depression using the Patient Health Questionnaire (PHQ-9), scores 0-27. We used generalized structural equation models and standardized coefficients to assess direct and indirect effects of sexual minority identity on depression via negative SM experiences, controlling for relevant demographic variables. We used Stata 15 for statistical analyses.

Results: We found a statistically significant positive relationship between LGB identity and reporting of higher depressive symptoms (Path C = beta: 0.17; $p < 0.01$; 95% C.I. 0.13 – 0.21). An indirect, statistically significant relation was found between LGB identity and depression (Path C' = beta: 0.13; $p < 0.01$; 95% C.I. 0.09 – 0.17) via negative social media experiences (Path AB = betas: 0.12; $p < 0.01$; 95% C.I. 0.08 – 0.16 and 0.31; $p < 0.01$; 95% C.I. 0.27 – 0.35, respectively). The AB-C' path model explained 19% of variance in depression.

Conclusions: Our findings indicate that reducing negative SM experiences among sexual minority individuals may be a significant intervention to help reducing depressive symptoms among this population. These results suggest it is important to continue studying the unique SM experiences of SMYA. Future research needs to focus on the potential contribution of positive SM interactions to mental health outcomes, as well as change overtime of the potential influence of both positive and negative SM experiences on depression.

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Paper Session 7

11:30 AM-11:45 AM

CABALLERISMO AND COMMUNICATION AS PREDICTORS OF PARTNER RECRUITMENT AMONG LATINX SEXUAL MINORITY COUPLES

Gabriel Robles, PhD¹, Trey V. Dellucci, MS², Beverlin del Rosario, BS, MA³, Ruben H. Jimenez, n/a⁴, Tyrel J. Starks, PhD⁵¹Hunter College, New York, NY, NY; ²The Graduate Center at CUNY, New York, NY; ³Hunter College/The Graduate Center, CUNY, New York, NY;⁴Hunter College's PRIDE Health Research Consortium, New York, NY; ⁵Hunter College, CUNY, Brooklyn, NY

Background: Latinx sexual minority men (LSMM) have the largest growing incidence rates of HIV diagnoses. Couples-focused research among sexual minorities has received considerable attention, because transmission risk behaviors are higher among main partners. Many dyadic studies utilize a sequential index approach to recruiting couples. One person in the couple (the index case) is recruited into the study. He is then asked to recruit his partner. While this sequential recruitment strategy is promising, some evidence suggests that index recruitment may bias samples to over-represent couples with better dyadic functioning. Given that LSMM have higher incident rates of HIV than other ethnic groups, it is critical to identify factors that would facilitate partner recruitment of LSMM into HIV prevention programs.

Methods: A national sample of 635 Latinx index cases was recruited via social media apps and 95 index partners were able to recruit their partner. Most men identified as gay (88.2%), earned less than \$30k per year (62.6%), had less than a bachelor's degree (61.9%), and were HIV negative/unknown (77.4%). Most index partners identified their main partner's ethnicity as also being Latinx (66.2%) and completed the survey in English (80.3%). Participants provided demographic information and completed the Communication Patterns Questionnaire and the Machismo Scale measuring both *machismo* and *caballerismo* (e.g., chivalry).

Results: Logistic regression analyses were conducted to examine the effect of dyadic communication, *machismo* and *caballerismo*, and demographic factors on the ability to recruit one's partner. The model tested all potential interactions of dyadic communication, *machismo* and *caballerismo* on the ability to recruit one's partner. Non-significant interactions were removed using a reverse hierarchical entry procedure. Analyses adjusted for HIV status, demographics and relationship length. Results indicated that index partners who were high in *caballerismo* and low in *machismo* had greater success in recruiting their partner, while those who were low in both *caballerismo* and *machismo* were the least successful. Second, there was a significant interaction between the constructive communication and *caballerismo*. Those who were high in *caballerismo* and low in constructive communication had the highest probability of successfully recruiting their partner, while positive communication was only a predictor of successful recruitment when *caballerismo* was low.

Conclusion: The findings in the present study have significant theoretical and clinical implications. The findings suggest that although communication is a useful health behavior to examine among couples, these factors would benefit from further consideration of cultural factors relevant to racial minorities, thus, better tailoring campaigns to recruit LSMM and facilitate partner engagement.

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Paper Session 8

10:45 AM–11:00 AM

SENSE OF PURPOSE IN LIFE AND HEALTH BEHAVIORS OVER TIME

Eric S. Kim, PhD¹, Koichiro Shiba, N/A², Julia Boehm, PhD³, Laura D. Kubzansky, PhD²¹Harvard University, Cambridge, MA; ²Harvard T.H. Chan School of Public Health, Boston, MA; ³Chapman University, Orange, CA

Objective: A growing body of research has observed that a higher sense of purpose in life is associated with lower risk of chronic conditions and premature mortality, and researchers speculate that health behaviors may partially explain these findings. However, the prospective association between sense of purpose in life and health behaviors is understudied. We tested whether a higher sense of purpose in life at baseline was associated with lower likelihood of engaging in healthy behaviors over time.

Methods: Prospective data were from the Health and Retirement Study, a nationally representative sample of U.S. older adults. Our sample included 13,770 adults assessed up to five times across 8 years.

Results: Among people who met recommended guidelines for a given health behavior at baseline, those in the top versus lowest quartile of purpose in life had a 36% lower likelihood of smoking initiation (95% CI: 0.42–0.99), 24% lower likelihood of becoming physically inactive (95% CI: 0.68–0.85), 34% lower likelihood of developing sleep problems (95% CI: 0.57–0.77), 16% lower likelihood of becoming overweight/obese (95% CI: 0.71–1.00), and there was a null association with likelihood of becoming a binge-drinker (HR=0.93, 95% 95% CI: 0.82–1.06) in sociodemographic-adjusted models. Findings for physical activity and sleep (but not smoking and body weight) remained evident after further adjusting for baseline health status and depression.

Conclusion: Overall, a sense of purpose in life was associated with higher likelihood of maintaining recommended levels of physical activity and sleep quality over 8 years, suggesting that it may be a valuable target for interventions aimed at helping older adults maintain these health behaviors.

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MERITORIOUS AWARD WINNER

Paper Session 8

11:00 AM–11:15 AM

THE ROLE OF SPIRITUALITY IN CONCEPTUALIZATIONS OF HEALTH MAINTENANCE AND AGING AMONG LATIN AMERICAN IMMIGRANTS IN THE BAY AREA

Sophia Weiner-Light, B.A.¹, Sergio Lanata, MD¹, Katherine Rankin, PhD¹, Katherine Possin, PhD¹, Daniel Dohan, PhD¹, Alissa Bernstein, PhD¹¹University of California, San Francisco, San Francisco, CA

Background: As the population ages, there is an increasing focus on addressing the health and wellbeing of older adults. In recent years, academic interest in spirituality and aging has been on the rise, with studies conflicting on the potential health benefits of spirituality and religiosity in older adults. Spirituality may play an especially salient role among immigrants from Latin America, as the emphasis on religion in various Latin American cultures is well-documented and, moreover, organized religion may provide an opportunity for immigrants, regardless of background, to build community. However, few studies identify the role that spirituality may play in the conceptualization of brain aging among immigrants from Latin America. This study aimed to capture the perspectives on aging and the maintenance of brain health of a small, yet diverse cohort of older adults who migrated to the Bay Area from urban and rural regions of Mexico, Nicaragua, El Salvador and Ecuador.

Methods: We conducted ethnographic interviews in Spanish with 15 immigrants over the age of 65. Interview questions addressed perspectives about the brain, aging, dementia, and health-seeking behaviors. Interviews were coded for key themes using Dedoose.

Results: Most participants, who had previously participated in a workshop on brain health, noted the importance of engaging in maintenance strategies to promote brain health, such as physical activity, diet, social activity and sleep. We focus here on the discussion of the role of spirituality and religion as a strategy to promote brain health, which emerged independent of the materials covered in the workshop, in 9 out of the 15 interviews. We identified 5 major themes: (1) *expressing gratitude to God for mental and physical health*, (2) *putting the onus of life and death in God's hands*, (3) *using church as a place to socialize and build community as an approach to leading a healthy lifestyle*, (4) *using prayer as nourishment for the soul and the brain*, and (5) *gaining inner-peace and calmness, and thus maintaining a healthy life, due to a connection with God*.

Conclusions: With the rise of the 65+ population and the expected increase in the incidence of dementia, it is critical to develop successful strategies for promoting brain health. This study illuminates one possible patient-centered approach, pertaining to the incorporation of customized spiritual interventions as a potential mechanism by which to increase the effectiveness of brain health promotion efforts.

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Paper Session 8

11:15 AM-11:30 AM

AN E-TRAINING PACKAGE TO ENHANCE CARE OF AGED AND DYING PRISONERS

Valerie H. Myers, PhD¹, Susan J. Loeb, PhD, RN, FGSA, FAAN², Erin Kitt-Lewis, PhD³, Julie L. Murphy, n/a⁴, Rachel Wion, PhD, RN⁵, Tiffany Jerrod, BS, MPH¹

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There are more than 2.3 million prisoners in the U.S. Much like demographic trends in the free world, the number of older inmates is growing. Despite advances in the free world, best practices for managing geriatric issues and end-of-life (EOL) care have not been adapted for use in corrections settings. Due to the paramount focus on security, technological advances available in the free world are inaccessible inside prison walls. This project, Enhancing Care for the Aged and Dying in Prisons (ECAD-P), built a full-scale media-rich interactive computer-based learning system for multidisciplinary staff consisting of six modules to address EOL and geriatric care issues in prisons. ECAD-P was iteratively built and tested. Usability testing was conducted in two rounds at two separate prisons located in different states with staff (n=24). The System Usability Scale (SUS), a validated tool for assessing the usability and acceptability of technological products, score was 75.10 (SD=15.45). This score suggests a high level of acceptability and usability since a score of 68 is considered above average. Full scale testing of the ECAD-P learning system occurred at 7 state prisons. A total of 241 participants consented to participate; 173 completed all training modules and post-test (completion rate = 71.78%). Outcomes were (1) knowledge acquisition of the need for and delivery of care for aging and dying inmates (i.e., cognitive measures); and (2) values, motivations, and attitudes for providing care to inmates (i.e., affective measures). A paired-samples t-test was conducted to compare cognitive pre- and post-training measures. Cognitive post-test scores (M=90.74, SD= 8.60) were significantly higher than cognitive pre-test scores (M=81.01, SD=12.53 $t(185) = 11.13, p < .0001$). At post-test, affective measures were statistically higher (M=79.63, SD=18.74; $t(168) = 16.36, p < .0001$) than at pre-test (M=48.20, SD=24.17). ANCOVAs controlling for pre-test values revealed no significant differences at post-test for sex or ethnicity variables (all $p > .05$). The mean SUS score for the large-scale testing (n=171) was 69.34 (SD=16.08). These outcomes reveal that the ECAD-P product is acceptable, feasible, and usable in corrections. Staff improve their knowledge about geriatric and EOL care after receiving the ECAD-P training. Correctional settings across the U.S. face growing demands to better address the health care and management needs of aged, chronically ill, and dying inmates. This e-training holds promise to contribute to better preparation of correctional staff to effectively care for these populations.

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Paper Session 8

11:30 AM-11:45 AM

LOSING A LOVED ONE TO CHRONIC ILLNESS IS ASSOCIATED WITH POORER ADJUSTMENT TO GRIEF

Elisabeth McLean, B.A.¹, Jonathan D. Singer, MA², Anthony Papa, PhD³

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Introduction: Numerous studies have identified risk factors for pathological grief disorder (PGD). Studies are equivocal regarding illness as a cause of death as a risk factor for PGD for family members. Identifying if illness moderates the relationship between established modifiable risk factors and PGD may help identify individuals who are at greater risk for PGD.

Methods: First, the study replicated past studies by identifying if caregiving and more contact spent with the person who has died are risk factors for PGD in two unique samples. Second, examines if illness significantly moderates the relationship between the established risk factors (i.e., caregiver; contact) and PGD. Recruitment for both studies was completed through Amazon MTurk. Sample characteristics included: Study 1, N = 301 (175 females), Mage = 37.32 (SD=12.54) and Study 2, N=159 (96 females), Mage = 34.84 (SD=12.44). Results Replicating established findings, there were main effects for increases in caregiving and contact with the person who had passed away predicting significantly increased rates of PGD (p 's < .01). The interaction term between illness and amount of contact ($p < .01$) significantly predicted PG symptomatology in study 1 ($F(3, 297) = 16.72, p < .001$) and study 2 ($p < .05$; $F(3, 145) = 5.63, p < .001$). The interaction term between illness and caregiver or not ($p < .05$) significantly predicted PG symptomatology in study 1 ($F(3, 297) = 8.83, p < .001$) and study 2 ($F(3, 145) = 4.41, p < .001$). Simple slope analysis indicated that for people who had a loved one die of an illness, caregiving was associated with a higher level of grief ($B=2.02, p < .05$). For those whose loved one did not die of illness, caretaking had no effect on intensity of grief ($B=-1.36, p > .05$). Simple slope analysis indicated that for people who had a loved one die of an illness, time spent before their death was associated with a higher level of grief ($B=-3.33, p < .05$). For those whose loved one did not die of illness, time spent before their death had no effect on intensity of grief ($B=0.98, p > .05$). It should be noted that individuals who were caregiving for an individual who did not have an illness reported caring for someone who ended up dying of "old age. Discussion The combined effect of caregiving and losing a loved to a chronic illness confers the greatest risk for poor adjustment to grief. Also, the combined effect of amount of contact prior to their death and losing a loved to a chronic illness resulted in greatest risk for poor adjustment to grief.

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Thursday April 2nd, 2020 12:45 PM-1:45 PM

Panel 1

12:45 PM-1:45 PM

THE PROLIFERATION OF DIFFERENT HEALTH BEHAVIOR THEORIES IN BEHAVIORAL MEDICINE IS HINDERING ADVANCES IN RESEARCH AND PRACTICE

Paul Branscum, PhD, RD¹, Ryan E. Rhodes, Ph.D.², Susan Michie, BA, MPhil, DPhil³, Claudio Nigg, PhD⁴, Jane Ogden, PhD⁵, Eric B. Hekler, PhD⁶

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Health behavior theory has become an indispensable tool for research and practice, but recently it has become apparent that there are numerous theories practitioners and researchers can utilize, oftentimes having overlapping perspectives and constructs. For example, in a recent review an expert advisory group searched the literature from 1960 to 2012 and identified 83 theories of behavior change. This points to the need for more uniformity in the field if it is to move forward, as a lot of effort is being exerted studying little known and underutilized theories. Yet, such uniformity could also stifle creativity, as researchers and practitioners may only want to use theories that are well-known. In this session, researchers will debate two different perspectives on the proliferation of different health behavior theories: that advances in behavior change research and practice are hindered by having too many theoretical perspectives to choose from, or having a large number of theoretical perspectives will ultimately help research and practice move forward, as we attempt to uncover vital questions such as “what works”, “when does it work”, and “with whom does it work best”.

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Panel 2

12:45 PM-1:45 PM

PRESIDENTIAL PANEL DISCUSSION: SHARING YOUR FINDINGS: STRATEGIES FOR EFFECTIVE AND ENGAGING SCIENCE COMMUNICATION

Monica Wang, ScD, MS¹, Berly McCoy, PhD², Becky Mackelprang, Ph.D.³, Alexandra Schnoes, PhD⁴, Carly M. Goldstein, PhD⁵

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Without science communication, research findings stay in academia. Although training opportunities are growing, it is not yet common practice to teach scientists communication skills concurrently with research training. For those that recognize the importance of science communication, it is often difficult to know where to begin and how to incorporate an added skillset into an already demanding workload. The goal of this panel is to give attendees a practical set of actions they can take to get started in science communication and considerations to keep in mind before they begin engaging in science communication through writing, multimedia, and in person activities. External panelists with expertise in science communication will co-present on the panel. Each will share 1) their journey from science to science communication 2) the current projects they are focusing on and 3) their advice on how to get started communicating science to a particular audience. The panel discussion will include important concepts in communicating science such as understanding an audience, using storytelling as a tool to communicate, and reducing jargon, as well as a myriad of resources available to scientists interested in improving their communication skills.

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Panel 3

12:45 PM-1:45 PM

DHC PRESENTS: DIGITAL HEALTH: THE YEAR IN REVIEW

Emily G. Lattie, PhD¹, Jessica Y. Breland, PhD², Danielle E. Jake-Schoffman, PhD³, Manal Alabduljabbar, PhD Candidate⁴, Charles R. Jonassaint, PhD, MHS⁵, Ellen Beckjord, PhD, MPH⁶, Heather Cole-Lewis, PhD, MPH⁷, Stephen M. Schueller, PhD⁸, Urmimala Sarkar, MD⁹

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Continuing from last year, the Society of Behavioral Medicine's Digital Health Council decided to produce a Digital Health Year in Review. The goal of the Review is to inform SBM and the broader interested public of advances, innovations, and developments in the field of digital health, both within academia and in industry. In this panel, members of the Digital Health Council and the Year in Review Workgroup will describe the methodology used to identify, triage, review, and synthesize information from the peer-reviewed and gray literature to produce the Year in Review. We will present the Review and facilitate a discussion with thought leaders from both within and outside of SBM about the contents of the Review and forecast what may be to come in 2020. Finally, we will describe plans to further disseminate the Review beyond presentation at the Annual Meeting. Panel members will include [blinded for review]

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Panel 4

12:45 PM-1:45 PM

CHALLENGES AND SOLUTIONS OF OPEN SCIENCE RELATED TO OPEN ACCESS PUBLISHING, RESOURCE SHARING, AND CITIZEN SCIENCE

Dominika Kwasnicka, PhD¹, Bradford W. Hesse, PhD², Molly E. Waring, PhD³, Eric B. Hekler, PhD⁴, David E. Conroy, PhD⁵, Sarah Andrus, BA, MBA⁶, Kenneth P. Tercyak, PhD⁷, Abby C. King, PhD⁸

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Background: The “drive for open science” has increased over the past years and has reached heightened visibility with the announcement of large participative program activities such as the National Institutes of Health’s “BRAIN initiative,” the “All of Us” program, and the “Cancer Moonshot.” Legislative efforts have added to the discussion, with public legislation passed to open access to research funded by public funds to the public domain within 12 months after publication. Others see the transition to openness as a necessary growing pain for overcoming the risk of irreproducible results and an inherent publishing bias against findings supporting the null hypothesis. The movement to open science is not without controversy, as opponents and allies exchange deep-felt arguments. For some it is the end of an ordered status quo of discovery, whereas for others it is the promise of accelerated science and advancement. Up to recently, discussions have been confined to the basic and medical sciences; however, there have been some efforts to bring social and behavioral science into the open science arena.

Aims/Methods: As the trend for more and more open science initiatives continues, the Society of Behavioral Medicine (SBM) has convened a Working Group to lead the Society’s exploration of the implications of this movement for its members and others working in behavioral medicine. The aims of this panel discussion are to: (1) Discuss implications of open science for social and behavioral scientists working to improve public health (e.g., what can behavioral scientists learn from the existing experience with open science?; does open science affect collaborative efforts between behavioral scientists and basic science?), (2) Educate SBM members about open science (e.g., are the implications of open science different for established versus early career researchers?), and (3) Outline and discuss proposed recommendations developed by the Working Group that can be adopted by the SBM members.

Key areas: This panel will discuss challenges and potential benefits of open science focusing on three key areas: open access publishing, resource sharing, and citizen science. The panel members will outline and discuss recommendations for the Society and behavioral scientists to address the challenges of open science.

Discussion: We will propose and discuss methods available for increasing transparency and openness. We will debate the incentives and disincentives to increasing transparency and openness and also the social consequences of open science. We will open the discussion to engage the audience in conversation about current practices and suggestions for how to move the field forward adapting best practices for open science, that overcome challenges to open science and leverage these practices to maximize the impact of our science on the nation’s health.

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Panel 5

12:45 PM-1:45 PM

ADDRESSING GUN VIOLENCE AT MULTIPLE LEVELS: IN OUR CLINICS, OUR RESEARCH, OUR CLASSROOMS, AND THROUGH OUR POLITICAL PROCESS

Sheela Raja, PhD¹, Pamela Behrman, MS, PhD², Rebecca Cunningham, MD³, Brian (Tate) Guelzow, PhD⁴, Kathryn Maher, Ph.D.⁵, Arlen C. Moller, PhD⁶

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Gun violence in the U.S. is a complex and growing public health crisis. The Society of Behavioral Medicine (SBM) is comprised of a variety of behavioral scientists and clinicians, uniquely conducting research and practice at the intersection of trauma and health, often on the “front lines.” Gun violence has adverse influences on both physical and mental health and as SBM members, we are uniquely trained to examine this interaction. This panel discussion will focus on some of the ways that SBM’s cross-disciplinary members are contributing to finding and leading evidence-based solutions. We hope this open discussion will inspire more SBM members to use their expertise toward addressing this challenging public health crisis in all its forms. Specifically, panel members will describe their ongoing work to reduce gun violence in a variety of settings including medical and clinical settings, research, higher education, our communities, and through policy advocacy. One theme involves recognizing the impact of trauma, and its far-reaching impact on health. How can SBM members raise awareness to increase trauma informed care, particularly to other health care providers and behavioral scientists? A second theme involves raising awareness of research and behavioral interventions around gun violence (e.g., safely locking firearms at home, or when appropriate, outside the home, to reduce risk of suicide and unintentional injury). Panel members will also discuss unique challenges related to political partisanship, and invite audience participation. In sum, the goal of this panel is to echo past-President Sherry Pagato’s message from last year, that: “*In an era where fake news and misinformation are spreading like wildfire, it is more imperative than ever that we communicate our science and public health messaging loudly and clearly.*” We hope this panel discussion will further lead the narrative on gun violence by stimulating, leveraging, and disseminating evidence-based behavioral science.

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Panel 6

12:45 PM-1:45 PM

COMPATIBILITIES BETWEEN THE MULTIPHASE OPTIMIZATION STRATEGY AND IMPLEMENTATION SCIENCE: AN OPEN DISCUSSION

Heather Wasser, PhD, MPH¹, Kate Guastaferrro, PhD, MPH², Paul Estabrooks, PhD³, Gary Bennett, PhD⁴, Marya Gwadz, PhD, MA⁵

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This panel discussion seeks to identify ways in which the Multiphase Optimization Strategy (MOST) can be utilized to promote the goals of Implementation Science, which is the study of methods to promote the adoption, adaptation, and integration of evidence-based practices (EBP), interventions and policies into routine health care and public health settings. More specifically, Implementation Research involves examining mechanisms of EBP dissemination and quality implementation, testing strategies to address mechanisms, and studying the potential for EBP adaptation, systemic integration, scale-up/out, and sustainability. Key is a focus on clinical and community systems that require implementation facilitation across multiple levels (e.g., administrative decision making, those responsible for EBP implementation). While it seems that MOST, a systematic framework by which to improve multicomponent behavioral treatment packages, could be useful in Implementation Research, we currently find no examples of MOST being used in the field of Implementation Science. Conversely, researchers who are using MOST are largely doing so to elucidate the most effective package of components on a given behavioral or biological outcome, but rarely incorporate the outcomes considered by implementation researchers. This is despite optimization being defined as “the process of identifying an intervention that provides the best expected outcome obtainable within key constraints imposed by the need for efficiency, economy, and/or scalability.” To best facilitate a discussion around the intersection of the MOST framework and Implementation Science, we will begin with brief overviews of MOST and Implementation Research, including our panel members’ initial thoughts on their compatibilities. This will be followed by two examples of current research projects utilizing the MOST framework and open discussion around ways in which such projects might incorporate Implementation Research methods, as well as a broader discussion of how the MOST framework might be applied within the field of Implementation Science. This panel discussion may be most useful and of interest to those already familiar with the MOST framework or Implementation Science. Audience participation in the discussion will be highly encouraged.

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Panel 7

12:45 PM-1:45 PM

ENGAGING UNDERSERVED OR VULNERABLE POPULATIONS IN RESEARCH: MOVING BEYOND THE NIH INCLUSION ENROLLMENT REPORT

Shelby Langer, PhD¹, Felipe G. Castro, PhD, MSW¹, Rebecca E. Lee, PhD¹, Linda K. Larkey, PhD¹, Elizabeth Reifsnider, PhD, RN, WHNP-BC, PHCNS-BC, FAANP, FAAN¹, Shawn Youngstedt, PhD², Kelly Davis, Ph.D.¹, Rodney P. Joseph, PhD¹, Gabriel Shaibi, PhD³

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Background: The Belmont Report (1979) outlined basic ethical principles for conducting biomedical and behavioral research involving human participants. The Code of Federal Regulations (45 CFR 46) further specifies requirements to ensure protections for vulnerable populations. We propose a panel discussion that describes strategies to adhere to and advance important considerations when working with vulnerable populations. These include minority women and children, undocumented immigrants, veterans with mental health conditions, trauma survivors, and patients near end-of-life. These populations are at greater risk for adverse health outcomes and are less likely to have access to personalized health care.

Panel composition: Investigators from a Research 1 university will discuss challenges faced and lessons learned in the process of recruiting, engaging, and retaining research participants from a variety of underserved or vulnerable populations: Latinx children, adolescents, and families with obesity; Latinx adults with varying levels of acculturation; African American women at risk for cardiometabolic diseases; severely depressed and/or suicidal Veterans; women with histories of trauma and interpersonal violence; and patients with life-limiting illness and their caregiving partners. Participants in studies conducted by these investigators have been recruited to descriptive, observational, experimental or interventional studies through various networks including clinics and health-care organizations, community centers and schools, and social media and other online outlets. We will share typical recruitment and retention rates and culturally appropriate actions to promote engagement. Other topics to be covered include challenges faced such as fear and mistrust (e.g., among Latinx families, regardless of their immigrant status or documentation); avoiding perception of coercion; data security; the importance of investigator cultural competence; the need to develop and foster a sense of trust coupled with bidirectional communications with stakeholders and citizen scientists; the need to design interventions that address a community-defined need; and ethical issues in providing practical assistance and appropriate compensation to facilitate participation. These topics will be discussed in light of changing demographics and healthcare landscapes, and the need to balance scientific advancement and community/clinic engagement.

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Panel 8

12:45 PM-1:45 PM

USING PUBLIC HEALTH MESSAGING AND COMMUNICATION CAMPAIGNS FOR MEANINGFUL BEHAVIOR CHANGE

Alan R. Teo, M.D., M.S.¹, Miriam H. Eisenberg Colman, Ph.D.², Aisha Langford, PhD³, Ronne Ostby, MA²¹VA Portland Health Care System, Portland, OR; ²Fors Marsh Group, Arlington, VA; ³NYU School of Medicine, New York, NY

Communication campaigns are planned efforts featuring an organized set of messages, strategies, and tactics tied to one or more objectives intended to generate specific outcomes or effects in large audiences, within a specific period of time. Long used as an intervention to promote public health and behavior change, communication campaigns have the potential to influence not only knowledge and attitudes, but also trigger individual actions. At the same time, communication campaigns have been often critiqued for being too broad with vague goals and not showing return on investment.

In this Panel Discussion, we will present a structured, sequential overview to the use of public messaging and communication campaigns for health behavior change. The first presenter will describe best practices for designing and developing effective health communication campaigns. This discussion will include strategies for understanding the consumer/patient mindset and using that information to refine the campaign messages. Using hypertension as an example, the second presenter will address the process of translating messages for a public (lay) audience and when tailoring vs. targeting may be appropriate. Plain language principles and strategies for evaluating health communication efforts will also be discussed. The third presenter will provide an in-depth examination of communication campaigns related to suicide prevention, drawing from recent and ongoing communication campaigns targeting service members and military veterans. Particular attention will be drawn to empirical studies of communication campaigns providing evidence for (and against) behavior change, such as help-seeking behavior. The panel chair will probe panelists with questions about challenges they have faced, lessons they have learned, and advice they have for SBM members interested in developing effective health communication campaigns and translating their research skills to inform communication campaigns.

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Panel 9

12:45 PM-1:45 PM

IMPACTFUL HEALTH AND AGING POLICY: PRACTICAL APPROACHES FOR BEHAVIORAL MEDICINE RESEARCHERS

Lauren R. Bangerter, PhD¹, Renae L. Smith-Ray, PhD, MA², Akilah Dulin, PhD³, Joanna Buscemi, PhD⁴¹Mayo Clinic, Minneapolis, MN; ²Walgreen Co, Deerfield, IL; ³Brown University, Providence, RI; ⁴DePaul University, Chicago, IL

With an aging population that is now living longer than ever before, one of the greatest challenges for the U.S. is ensuring that health policies provide the best possible health outcomes and quality of life for aging adults and their families. Evidence-based state and federal policies in health and aging can have a substantial positive impact on older adults' health outcomes, however, many behavioral medicine researchers do not receive policy-based training and may not know how to become involved in health policy. The objective of this panel is to stimulate behavioral researchers' interests in contributing their scientific expertise in behavioral medicine to the health policy process. The panel will highlight federal policies that address aging, with emphasis on some of the most recent policies, including the reauthorization of the Older American's Act, the RAISE Family Caregiver Act, and the Supporting Grandparents Raising Grandchildren Act. The dialog will center on the conception, development, and implementation of these broad federal policies. Using diabetes-related policy as an example, the panel will discuss how differing health policies by state have been associated with varied health outcomes of older adults. Practical approaches to influencing policy will also be discussed, including the importance of policy briefs and op-eds. The panel will also feature discussion about how SBM is involved in the health policy brief process. Panel attendees will participate in an interactive session where they will work collaboratively to draft a policy brief in their respective research areas. The panel session will be an opportunity for behavioral medicine researchers to gain insight into the policy process, and learn about practical steps to ensure that scientific knowledge is translated to impactful health policy that promotes health across the lifespan.

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Panel 10

12:45 PM-1:45 PM

THE OBESITY MEDICAL EDUCATION COLLABORATIVE: DISSEMINATION, IMPLEMENTATION, AND THE ROLE OF BEHAVIORAL MEDICINE

Catherine L. Davis, PhD, FTOS, FABMR, FSBM¹, Robert F. Kushner, MD², Taraneh Soleymani, MD FTOS³, Joshua D. Brown, PhD, FTOS⁴, Sherri Sheinfeld Gorin, PhD⁵, Judith K. Ockene, MA, MEd, PhD⁶¹Georgia Prevention Institute, Medical College of Georgia, Augusta University, Augusta, GA; ²Feinberg School of Medicine, Northwestern University, Chicago, IL; ³Summit Medical Group, Morristown, NJ; ⁴Wake Forest Baptist Health, Winston-Salem, NC; ⁵University of Michigan, NYPAC, Ann Arbor, MI; ⁶University of Massachusetts Medical School, Worcester, MA

The Obesity Medical Education Collaborative (OMEC; 63 members from 15 national professional organizations, including SBM) developed obesity-related competencies and benchmarks for medical education (undergraduate (MD), residency, fellowship, and continuing education for MDs, PAs and NPs) using the six core competencies of the Accreditation Council for Graduate Medical Education. After undergoing an external review by 19 organizations, including the Association of American Medical Colleges, the competencies and associated benchmarks were published in June 2019 (<https://onlinelibrary.wiley.com/doi/10.1002/oby.22471>) and endorsed by 20 national professional organizations including SBM. The competencies draw on behavioral medicine expertise and are intended to be used by medical, nursing, and physician assistant educators.

During this panel discussion, participants will learn about the obesity medicine competencies and benchmarks from those who crafted them. We will focus on the potential contributions of behavioral medicine on implementing the OMEC standards in medical education. With obesity and diabetes as exemplary conditions, we will discuss evidence-based interventions in counseling, weight loss, and physical activity (e.g., DPP and Look AHEAD trials) that align with the benchmarks. The panel will be led by authors of the standards. Chairs, SBM members who worked on these standards, will engage the panelists and attendees in a moderated discussion.

Sponsored by the Scientific & Professional Liaison Council and the Diabetes, Evidence-Based Behavioral Medicine, Obesity & Eating Disorders, and Physical Activity Special Interest Groups.

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Panel 11

12:45 PM-1:45 PM

IN PURSUIT OF CANCER HEALTH EQUITY

Marian L. Fitzgibbon, PhD¹, Christina Ciecierski, PhD², Laura L. Hayman, PhD, MSN, FAAN, FAHA, FPCNA³, Isabel C. Scarinci, PhD, MPH⁴, Karriem S. Watson, DHS, MPH, MS⁵, Betina Yanez, PhD⁶

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This panel discussion is based on the premise that today's healthcare challenges are ideally addressed through community-academic partnerships. To meet the aims of this year's conference, this panel discussion uses the U54 Comprehensive Partnerships to Advance Cancer Health Equity (CPACHE) Program as a framework to provide a forum for discussion from individuals at institutions funded under this NCI mechanism. The overarching expectation of CPACHE is to advance the national cancer research agenda through the development of partnerships between institutions that serve underserved cancer health disparity populations and NCI-designated cancer centers. The partnerships are expected to develop a multidisciplinary, multi-institutional approach to improve institutional capacity that increases cancer research at the minority serving institutions. They are also expected to increase research, training and community engagement opportunities for minority students and investigators. Additionally, there is an expectation that the designated cancer centers will enhance their research portfolio in cancer disparities research, increase the number of underserved populations on clinical trials, and that there will be meaningful inroads to engage and benefit their surrounding underserved communities. There is a growing body of evidence showing the benefits of diversity to increase innovation, communication, and broaden the health disparities research agenda. The panelists are each involved in a U54 partnership, representing institutions with substantially different cultures and contrasting institutional demands. The institutions include a public teaching institution, urban public research-intensive institutions, and comprehensive cancer centers. Therefore, each panelist has a unique perspective on both strengths and challenges their institution brings to the partnership and how they have addressed these in their respective U54. Each panelist will discuss faculty and community stakeholder engagement as well as their paths in identifying collective aims, inter-institutional research projects and training programs. A central theme will be how these objectives were developed and addressed through the lens of their respective institutional culture and mission. A primary goal is to engage the audience to advance a dialogue to help move the field forward regarding what elements can foster the success of these mutually beneficial, collaborative partnerships.

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Panel 12

12:45 PM-1:45 PM

ALIGNING REAL-WORLD EVIDENCE COLLECTION WITH THE NIMH RESEARCH DOMAIN CRITERIA (RDOC) FOR ASSESSING MENTAL HEALTH DISORDERS

Uma Vaidyanathan, PhD¹, Abhishek Pratap, MS², Emily G. Lattie, PhD³, Isaac Galatzerlevy, PhD⁴

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Smartphones offer a powerful way for scientists to gather large scale real-world evidence (e.g., life space, social interaction, self-assessments) frequently and have changed the landscape of behavioral medicine research. Several large scale studies have shown the feasibility of enrolling thousands of participants remotely and gathering high-frequency behavioral data using active and passive remote assessments. There is tremendous potential in using these large datasets to answer key questions on behavioral and mental processes. However, much remains to be understood about how best to synthesize and utilize high-frequency real-world data in relation to mental health and illness. One way to do so would be to use the National Institute of Mental Health's (NIMH) Research Domain Criteria (RDoC) framework. RDoC is a dynamic evidence-based framework that links quantifiable dimensional constructs of human behaviors to measurable units of analysis (or methodologies) such as genes, molecules, circuits, physiology, behaviors, and self-reported data. The constructs were defined on the basis of extant evidence for (1) a particular behavioral or cognitive function (e.g., fear or working memory), (2) a neural circuit or system that implements the function, and (3) their association with mental disorders.

In this panel, we discuss the challenges and opportunities of using remote digital technology for assessing and quantifying human behavior specifically as it relates to the RDoC constructs. We will start with a brief introduction to the RDoC research framework, followed by a discussion of key initial considerations emerging from some of the recent large-scale fully remote clinical studies in mental health. Discussions will include but not be limited to the need for engaging participants remotely, developing best practices for user-centered design research to elicit valid and reliable data for mental health, and enabling the exchange of real-world datasets to enable large scale computational phenotyping. We will then open the floor to discussion on ways to advance the study of digital mental health on both the conceptual (e.g., designing reliable and valid studies with adequate sample sizes) and implementation (e.g., establishing open-source tech platforms and data sharing standards) fronts.

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Panel 13

12:45 PM-1:45 PM

PRACTICAL AND ETHICAL CONSIDERATIONS FOR CONDUCTING ONLINE RESEARCH AMONG SEXUAL AND GENDER MINORITY YOUTH

Kimberly M. Nelson, PhD, MPH¹, Sophia Choukas-Bradley, Ph.D.², Allegra R. Gordon, ScD, MPH³, Kathryn Macapagal, PhD⁴

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Sexual and gender minority (SGM) adolescents and young adults experience substantial mental and physical health disparities. As SGM youth are often considered “hidden” or “difficult-to-reach,” many researchers seeking to address SGM health disparities use online methods to recruit, assess, understand, and intervene with these youth. Although online methods can be effective, they also have drawbacks and unique ethical considerations. This is particularly true for research that is asking about or intervening on more sensitive topics (e.g., sexual health, suicidality, substance use, eating disorders, traumatic experiences) or recruiting participants who are below the age of majority and not “out” about their SGM status to their guardians.

The proposed panel will include four researchers who utilize a diverse array of online methods (e.g., online focus groups, surveys, social media, interactive intervention websites/apps) to assess and address SGM health disparities among youth. Panelists will provide an overview of online methods for recruitment, data collection, intervention development/implementation, and community engagement with SGM youth. Within each of these topics panelists will present the benefits/challenges of selected methods and ethical considerations specific to working with SGM youth. Following that overview, there will be a discussion of how to address the rapidly evolving technology and consumer preference landscape when designing and conducting online research with SGM youth. The panel will conclude with time for audience questions and discussion. The overall goal of the panel is to introduce the SBM audience to the unique benefits, challenges, and ethical issues of conducting online research with SGM youth and highlight the importance of addressing these factors throughout the research process.

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Panel 14

12:45 PM-1:45 PM

PRACTICAL GUIDELINES ON TREATING CHRONIC PAIN AND CO-OCCURRING SUBSTANCE USE DISORDERS FOR ALL CLINICIANS

Payal Mapara, PsyD¹, Sarah A. Palyo, PhD², Stephanie L. Cardoos, PhD³

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Historically, pain management services and substance use disorder services have been siloed. Furthermore, the intersection of chronic pain and substance use disorders has not been well understood by treatment providers, resulting in patients who struggle with both conditions having limited treatment options. Rates of co-occurring chronic pain and substance use disorders continue to rise especially in light of the current opioid epidemic. Identifying substance use as an exclusion criteria for chronic pain treatment not only limits access to care, but may serve to further worsen both conditions as substances are often used as a means of pain and stress management in chronic pain populations. At the San Francisco VA Medical Center, we have developed treatment strategies to integrate substance use disorder treatment in every level of care across our stepped care model for pain, to integrate treatment for pain into substance use disorder programs, and to treat both within primary care medicine. We will discuss the rationale for such an integration, the barriers to integration, and case examples that illustrate need for integration. We will present on current research on the psychological treatment of chronic pain and substance use disorders, present interdisciplinary models of care developed at the SFVA for integrated treatment at the primary and tertiary level of care, and share lessons learned from our experiences including practical tips on suicide risk assessment and Narcan education and distribution. Lastly, we will provide learners with evidence based behavioral pain management skills that can be utilized within any clinical setting and implemented by any health-care provider.

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Panel 15

12:45 PM-1:45 PM

MONITOR → INNOVATE: MULTI-LEVEL ADAPTIVE IMPLEMENTATION APPROACH TO INCREASE IRON FOLIC ACID SUPPLEMENT DEMAND IN RURAL INDIA

Ichhya Pant, MPH, DrPH(C)¹, Lipika Patro, BA², Erica Sedlander, MPH, DrPH(C)³, Rajiv N. Rimal, PhD⁴

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Background: Operational and methodological constraints as well as meaningful stakeholder participation in the monitoring and implementation process is challenging. Donors, evaluators, participants, and implementers alike seek timely, rigorous, inclusive, and nimble monitoring systems to inform and innovate implementation delivery. With the proliferation of the digital age, Information and Communication Technologies (ICTs) have the potential to improve monitoring and implementation processes especially when combined with data triangulation and adaptive implementation management.

Objectives: The goal of the Reduction in Anemia through Normative Innovations (RANI) project is to increase iron folic acid (IFA) supplement use and reduce anemia among women of reproductive age in Angul, Odisha. Our innovative process evaluation and adaptive implementation approach aims to leverage ICTs and developmental evaluation methods to monitor and improve the delivery of several social behavior change communication strategies.

Methods: We will use a multi-level mixed-methods approach grounded in developmental and participatory evaluation philosophies. We will use surveys and structured observation to monitor fidelity to implementation and receptivity to implementation activities among study participants. Quantitative data will evaluate implementation dose, coverage, exposure, and reach of intervention activities, and qualitative data will delve more deeply into reasons for high or low functioning. IFA supply and demand will also be monitored for potential disruption. Data will be collected from 130 intervention villages in real-time. We will use live dashboards thematic analysis to analyze our data.

Monitoring data will also be triangulated with survey data at regular intervals. Sense-making activities will engender a shared-understanding of ground realities for geographically dispersed and culturally diverse stakeholders to systematically identify implementation feedback loops and facilitate timely course corrections. Specifically, we will identify opportunities to implement feedback loops for ongoing supportive supervision for our community facilitators promoting joint problem-solving, and communication. Monthly media and hemoglobin level demonstration strategies will be informed by participant engagement and receptivity. Disruption in the supply and demand of IFA supplements will activate contingency plans to mobilize local stakeholders and advocate for timely resolutions. Unintended effects will be monitored based on ongoing feedback from our community facilitators.

Conclusions: Documenting our processes will inform the future scale up of RANI or projects with similar objectives embracing a technology-enabled adaptive monitoring and implementation approach in low or high resource settings.

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Thursday April 2nd, 2020 2:00 PM-3:15 PM

Symposium 18

2:00 PM-3:15 PM

TWEET, RETWEET, AND LIKE IT: THE SPREAD OF HEALTH MISINFORMATION IN ONLINE COMMUNITIES

Sherry Pagoto, PhD¹, Molly E. Waring, PhD¹, Kelsey M. Arroyo, B.S.², Jaime E. Sidani, PhD, MPH, CHES³, Wen-ying Sylvia Chou, PhD, MPH⁴

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The 2020 SBM Annual Meeting theme, *Finding Innovative Solutions to Tomorrow's Health Challenges*, tackles grand challenges confronting public health today. Viral health misinformation is arguably one such grand challenge. The new media environment has Americans making billions of posts on social media every day. Online communities coalesce around shared interests, hobbies, and even health conditions. According to transportation theory, information shared by peers in online communities is highly influential to community members who have common characteristics and experiences. This is good or bad news depending on the veracity of the information shared. The purpose of this symposium is to discuss how health misinformation is shared in online communities on Twitter and Facebook. Three communities will be featured: e-cig enthusiasts on Twitter, adults in Facebook weight loss groups, and mothers in a Facebook group on parenting healthy teens. Each presenter will characterize the prevalence and type of health misinformation shared in their respective online community, the form misinformation takes, and who is posting it. The first presenter will characterize 10.5 million tweets about e-cigs, including the proportion coming from commercial versus non-commercial accounts, the proportion containing health misinformation, and patterns of spread. Findings will be instrumental in informing the design of public health counter-messaging campaigns. The second presenter examined the extent to which participants (N=175) in a professionally-moderated Facebook-delivered weight loss intervention shared links to health misinformation. Across 8,438 posts, only 0.2% contained links to health misinformation. Blogs, social media feeds, and magazines were the most common sources of health misinformation. Findings suggest that participants in private online communities that are moderated by a health professional may be protective against health misinformation. However, the type of professionally-moderated online community may matter. The third presenter also studied a professionally-moderated Facebook intervention but this time targeting moms interested in learning how to keep their teens healthy. Topics included nutrition, HPV vaccine, substance abuse, tanning, mental health, and smoking. Higher rates of health misinformation sharing were observed, with 18% of 175 participant posts containing health misinformation. This collection of studies reveals that the nature, form, and source of health misinformation shared in online communities varies widely depending on health topic and community characteristics. The discussant will compare and contrast these findings in context with relevant research emerging from NCI's portfolio and describe the research agenda needed to advance our knowledge on how to counteract health misinformation in the new media environment.

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2:00 PM-3:15 PM

HEALTH MISINFORMATION SHARED BY PARTICIPANTS IN PROFESSIONALLY MODERATED WEIGHT LOSS GROUPS ON FACEBOOK

Sherry Pagoto, PhD¹, Molly E. Waring, PhD¹, Kelsey M. Arroyo, B.S.², Jared Goetz, BA³, Matthew W. Schroeder, B.S., B.A.¹, Laurie C. Groshon, B.A.¹, Ran xu, PhD⁴

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While health misinformation has spread widely on social media, little is known about the degree to which it infiltrates private professionally-led online health communities. Because weight loss is a topic for which misinformation is common, the purpose of the present study was to examine the extent to which participants of professionally-moderated weight loss groups on Facebook shared links to health misinformation.

Design and Methods: Data were participant posts and comments from 3 studies of Facebook-delivered weight loss interventions (combined N=175 in 6 groups). Study feeds were based on the Diabetes Prevention Program and the moderators were professional weight loss counselors. Interventions were 8-16 weeks in length and involved twice daily posts that were intended to help participants execute behavioral weight loss strategies. Weight loss counselors replied to health misinformation with evidence-based feedback. Experts reviewed posts and comments that contained external links and coded the type of content being shared, whether health misinformation was present in the linked article, and the types of websites that reported health information and health misinformation specifically.

Results: Participants made a total of 8,438 posts and comments. Only 2% (n=189) of participant posts and comments contained links to external content. Of 189 links shared, 31% were recipes, 27% were health articles, 21% were resources (e.g., community events, workout videos), 6% were weight loss stories, and the remainder were humor (4%), motivational meme (3%), other (4%), or unknown/dead link (4%). A third (32%) of links contained health information. The types of websites of links containing health information were blogs/social media (23%), news outlets (23%), medicine/science websites (22%), magazine (13%), commercial product (5%), mobile app or podcast (5%), government agencies (5%), and recipe websites (3%). Health misinformation was present in 28% of links containing health information or 8% of all external links shared, which represented 0.2% of all participant posts/comments. The types of websites of links containing misinformation were 29% blogs/social media feeds, 24% magazines, 18% news, 18% science/medicine, 6% recipe websites, and 6% mobile app/podcasts.

Conclusion: A very small proportion of participant engagement included external links and a small proportion of those contained health misinformation, representing 0.2% of all participant posts and comments. Participants shared health information they found largely on blogs, in the news, or on public-facing medical/science websites. Although health misinformation is widely available on the internet, very little was shared in three professionally moderated weight loss groups. The presence of health professionals providing evidence-based health information may deter participants from sharing misinformation.

2

2:00 PM-3:15 PM

FREQUENCY AND TYPE OF HEALTH MISINFORMATION IN PARTICIPANT COMMENTS IN A FACEBOOK-DELIVERED CANCER RISK REDUCTION INTERVENTION

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Social media users often use online platforms to seek health information and while they find that information to be helpful, concerns still remain about the quality of such information. Social media is increasingly being used to deliver group-based health behavior interventions and health education campaigns, but little is known about the extent to which participants share health misinformation in these media. Monitoring health misinformation provides an opportunity for counter messaging but it may also compromise outcomes. The aim of this study was to examine the degree to which participants share health misinformation in a Facebook-delivered health education intervention for moms of teenage daughters and to describe the types of health misinformation shared. We examined comments to 42 randomly selected intervention posts on health topics such as lifestyle behaviors (n=9), indoor tanning (n=8), substance use (n=8), vaccines (n=6), mental health (n=5), parenting (n=4) and smoking (n=2) from May 2018 (first half of intervention) and January 2019 (second half of intervention). Posts had a total of 175 comments. We categorized comments as sharing an opinion, a personal experience, an intention, or information. Comments were then analyzed to examine whether misinformation was conveyed. Misinformation was defined as a fact, belief, opinion, or action that is not supported by scientific evidence. Participants (N=971) were 43 (SD=7) years old on average, and 84% were non-Hispanic white. The majority (77.1%) of participant comments shared a personal experience, 27.4% shared an opinion, 12.0% stated an intention, and 7.4% shared information. A total of 18.3% (n=32) of comments included misinformation. Misinformation was conveyed most often in comments classified as sharing an experience (56.25%), followed by opinions (25.0%), intentions (6.25%), information (6.25%) and comments reporting both an experience and intention (6.25%). This work reveals that health misinformation is shared in groups moderated by health professionals and is also conveyed when participants are sharing their intentions, opinions, and experiences. That these groups are moderated by health professionals presents a unique opportunity to combat misinformation. Further research is needed to examine how community members react to the sharing of misinformation in social media delivered interventions.

3

2:00 PM-3:15 PM

IDENTIFYING CONTEXTS AND DISSEMINATION PATTERNS OF ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) MISINFORMATION ON SOCIAL MEDIA

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Background: Traditional surveillance methods have identified common misconceptions about electronic nicotine delivery systems (ENDS; e.g., e-cigarettes, vaping) and nicotine. For example, 63% of youth who use JUUL do not know that it always contains nicotine, and some youth believe that nicotine is harmless. Social media platforms present the opportunity to conduct real-time surveillance with rich qualitative information to further understand these misconceptions. Despite a substantial amount of ENDS-related content on social media containing health misinformation, there is a dearth of research about the spread of this misinformation. Therefore, this project seeks to examine the context of ENDS-related misinformation as well as how it spreads through Twitter networks.

Methods: We collected 10.5 million tweets matching ENDS-related keywords from April 2018 through March 2019. We then filtered these tweets using nicotine-related keywords (n = 148,799) and further selected a random 2% subsample (n = 2,975) of tweets for human coding. A codebook was developed to indicate relevance to ENDS and presence of misinformation within specific domains. Inter-rater reliability will be assessed for independent double-coding and disagreements will be adjudicated. We will operationalize the spread of each tweet by assessing the number of retweets (i.e., rebroadcasting others' tweets).

Results: Preliminary findings from codebook development indicated that 95% of tweets were relevant to ENDS, 10% were related to ENDS product marketing, and 13% presented statements about ENDS-related nicotine or addiction. Of the tweets that presented such statements, 72% presented misinformation in one of four, non-exclusive domains (claims that nicotine is entirely safe and/or has substantial health benefits; misrepresentation of available research evidence; overgeneralization of subjective/anecdotal experiences; exaggeration of public health messages). An in-depth qualitative analysis of these domains, as well as determination of additional domains, will continue to be conducted. Additionally, we will use social network analysis to operationalize dissemination of these messages across Twitter user networks.

Conclusions: These results will help to inform public health advocates and practitioners on strategies to conduct surveillance, understand the context in which ENDS-related nicotine misinformation is being spread, and how to evaluate and counter the impact of these messages.

Symposium 19

2:00 PM-3:15 PM

HEALTH INFORMATION TECHNOLOGY INTERVENTIONS FOR PATIENT ENGAGEMENT IN SYMPTOM MANAGEMENT

Betina Yanez, PhD¹, Joan M. Griffin, PhD², John Devin Peipert, PhD³, Aricca D. Van Citters, MS⁴¹Northwestern University, Chicago, IL; ²Mayo Clinic, Rochester, MN; ³Northwestern University Feinberg School of Medicine, Chicago, IL; ⁴Geisel School of Medicine at Dartmouth, HANOVER, NH

Patients undergoing treatment for chronic diseases may experience severe symptoms. Assessing patient-reported outcomes (PROs) can provide valuable information on severe or life-threatening symptoms that may lead to deleterious clinical outcomes. Therefore, prompt recognition, discussion, and management of PROs can prevent severe adverse events, improve clinical outcomes, and improve health-related quality of life. Health information technology (HIT) platforms can facilitate the rapid assessment of PROs and patient-facing symptom management information. This symposium will present several studies that use electronic health records to link the assessment of PROs with patient-facing symptom management. The four projects in this symposium have a common goal of accelerating the adoption of HITs to collect and analyze PROs, provide guideline-concordant symptom management information to patients, and enhance patient-provider communication. The first two speakers will focus on projects that are part of the National Cancer Institute initiative for Improving the Management of Symptoms Across Cancer Treatment (IMPACT) and the third and fourth speakers will focus on studies using principles of health co-production to design and implement HIT platforms across two major healthcare settings. More specifically, the first speaker will present on the development of an innovative HIT platform that provides tailored feedback on PROs and symptom management for patients diagnosed with cancer. The second speaker will present on the development of a randomized pragmatic clinical trial that capitalizes on patient engagement to evaluate a guideline-informed, HIT-facilitated cancer symptom control care model. The third speaker will present on the process of using a health co-production approach to build and implement a patient- and clinician-facing dashboard to enhance shared treatment decision-making among patients with cancer and chronic kidney disease. The fourth speaker will present on the development of a HIT dashboard that leverages data infrastructure to enhance communication and outcomes among people living with a chronic illness, their caregivers, and their clinicians. Lessons learned from the development of these studies and initial study findings will have implications for approaches to patient engagement in trial design, symptom management in clinical care, and may inform the development of additional scalable and sustainable symptom management programs.

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2:00 PM-3:15 PM

PATIENT ENGAGEMENT IN THE DEVELOPMENT OF AN INNOVATIVE HEALTH INFORMATION TECHNOLOGY MANAGEMENT PROGRAM

Betina Yanez, PhD¹, Emily G. Lattie, PhD¹, Michael Bass, Ph.D.¹, Justin Smith, Ph.D.¹, Denise Scholtens, Ph.D.², Frank Penedo, PhD³, David Cella, PhD¹, Sofia Garcia, PhD¹¹Northwestern University, Chicago, IL; ²Northwestern University; ³Sylvester Comprehensive Cancer Center, Miami, FL

Background: Unmanaged symptoms can lead to worsening health-related quality of life (HRQOL) and clinical outcomes among patients diagnosed with cancer. Integrating patient-reported outcomes (PROs) into clinic settings can improve patient symptom monitoring and enhance opportunities for symptom management. The goal of this study is to evaluate a novel health information technology (HIT)-based program that links PROs with tailored, evidence-based symptom management information for patients diagnosed with cancer.

Methods: We are evaluating the effectiveness and implementation of *My Care Corner*, an HIT-linked program designed for ambulatory oncology patients. The goal of *My Care Corner* is to provide feedback on PROs, enhance symptom management and HRQOL, and improve care delivery. *My Care Corner* was developed with the input of key stakeholders through a process of usability testing to ensure integration of user-centered features that will increase uptake and adherence to the program. *My Care Corner* is programmed to provide patients with updated, tailored feedback and symptom management based on their recently completed electronic health record-based PRO assessments. *My Care Corner* also features a symptom library with information on evidence-based management tools for common cancer-related symptoms, a well-being resource library with information on diet and nutrition assistance, stress management strategies, and community-based resources. All content in this program is presented in an interactive format with audio and visual enhancements and is available in English and Spanish to appeal to a broader range of patients.

Discussion: We will discuss challenges to implementation of the program as well as strategies for successful patient-engagement within the program development and throughout the trial implementation. We will also discuss implications of this program for clinical care.

2

2:00 PM-3:15 PM

PATIENT ENGAGEMENT IN A STEPPED-WEDGE PRAGMATIC CLINICAL TRIAL TO IMPROVE MANAGEMENT OF COMMON SYMPTOMS ASSOCIATED WITH CANCER

Joan M. Griffin, PhD¹, Aaron Leppin, MD, MSc², Jennifer Ridgeway, PhD¹, Lila J. Ruten, PhD¹, Andrea Cheville, MD, MSCE², Kathryn Ruddy, MD, MPH³, Colleen Young, BA²

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The prevalence of inadequate symptom control among cancer patients is high despite availability of definitive clinical care guidelines. We are conducting a Hybrid II stepped-wedge cluster randomized pragmatic clinical trial to evaluate a guideline-informed, patient-centered care model. Medical oncology teams at Mayo Clinic-Rochester and Mayo Clinic Health System sites in the Midwest that care for patients with a range of cancers are being randomized to implement the “Enhanced, EHR-facilitated Cancer Symptom Control (E2C2)” study intervention. The intervention includes patients self-reporting sleep disturbance, pain, anxiety, depression, fatigue symptoms and/or limitations in physical function using 11-point numeric rating scales. Based on symptom scores, low-touch automated and high-touch manual clinical responses are generated using discrete EHR-embedded algorithms. Patients reporting moderate symptoms/limitations receive low-touch, automated self-management resources and patients reporting severe symptoms and/or functional limitations receive nurse-managed collaborative care. To assure the intervention addresses patient needs and to support adoption of self-management resources, cancer patients are engaged in the trial two ways: as patient advisors and study participants. Eight volunteer patient advisors have met either online, in person (5 times), or via private discussion board (15 conversation threads) to assist in the planning activities for the trial. Their efforts have led to these results 1) developing and testing usability of self-management materials and study website; 2) developing/acting in patient introductory video; 3) providing guidance on how clinicians should use patient information to support self-management; 4) developing an online peer support network available to study participants to help them manage symptoms, improve quality of life, and provide researchers insight to participant self-management. The trial will also employ mixed methods to identify disparities in the adoption and implementation of the E2C2 intervention among elderly and rural-dwelling cancer patients. Qualitative interviews will be conducted with a purposeful sample of rural/urban and elderly/non-elderly patients from each study site (stratified on response/non-response to electronic symptom reporting). Participants will be queried about their experience with the intervention, in order to improve its implementation and reduce disparities in care. The E2C2 intervention offers a patient-centric, pragmatic, scalable approach to deliver guideline-based symptom and function management for cancer patients. Patient engagement in the refinement of study-specific materials and processes, peer support network development and in the implementation strategies will support efforts to meet patients’ specific needs and improve health equity.

3

2:00 PM-3:15 PM

IMPLEMENTING THE HEALTH COPRODUCTION MODEL TO IMPROVE SHARED DECISION-MAKING AMONG CANCER AND KIDNEY DISEASE PATIENTS

John Devin Peipert, PhD¹, Betina Yanez, PhD², Sofia Garcia, PhD², Jeffrey Linder, MD, MPH³, Sheetal Kircher, MD⁴, Nisha Mohindra, MD⁴, Vikram Aggarwal, MD⁵, Victoria Morken, MPH⁶, Ronald T. Ackermann, MD MPH⁷, Cindy Barnard, PhD, MBA, MSJS⁸, David Cella, PhD²

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As new approaches to patient-centered healthcare emerge, there is an urgent need to test and implement promising care models that incorporate patient-reported outcomes (PROs) and increase opportunities for shared decision-making. Specifically, greater focus is needed on approaches to foster collaboration between patients and clinicians to generate treatment decisions that are timely, effective, and consistent with patients’ goals. Such approaches should leverage the advantages of health information technology (HIT) to extend opportunities for PRO assessments, source PRO data to clinicians through medical record platforms already in use clinically, and integrate these data with other information from the medical record to generate a more complete picture of the patient’s health, which can then be used to determine when new treatments are needed and which treatments are most appropriate to both patients and clinicians. Here, we describe the rationale, approach, and progress to date of a new, innovative project based on the health coproduction model that brings-together advancements in shared treatment decision-making, PRO science, and HIT to develop and test the effectiveness of the Northwestern Medicine Symptom Management Shared Decision-Making (NM-SMSDM) dashboards with advanced oncology and chronic kidney disease patients. The NM-SMSDM is being designed using a healthcare coproduction approach that involves sustained input from patients, clinicians, and other key stakeholders. Accessible to patients and clinicians, NM-SMSDM dashboards will track patients’ goals for care, lab values, PROs [symptoms and health-related quality of life (HRQOL)] assessed through a novel HIT platform, and treatment instructions to provide a common touchstone for how and when to start or change treatments that both patients and clinicians value. The presentation will focus on: 1) the theoretical basis for health coproduction dashboards; 2) the qualitative approach and results for dashboard co-design involving patients, caregivers, physicians, frontline-clinicians, and health informaticists; 3) our plans and protocol for a single-arm trial to test the impact of the NM-SMSDM on symptom control and HRQOL, increased shared decision-making, improved patient engagement, and increased satisfaction with care. We will conclude with actionable recommendations for implementation of the NM-SMSDM, and how we plan to implement in the NM-SMSDM routine care at Northwestern Medicine.

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A VISUAL DASHBOARD TO GUIDE COPRODUCTION OF CARE FOR PEOPLE LIVING WITH SERIOUS ILLNESS

Aricca D. Van Citters, MS¹, Inas Khayal, PhD², Megan Holthoff, MSHS², Shoshana Hort, MD², Catherine Saunders, MPH², Stephanie Tomlin, MPA, MS², Meredith MacMartin, MD, MPH², James Bowling, MPH², Amber Barnato, MD, MPH², Kathryn Kirkland, MD², Eugene Nelson, DSc, MPH²

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Background: Healthcare system complexity interferes with effective communication and goal-aligned services for people living with serious illness and their caregivers. The aim of this project is to codesign a dashboard that leverages data infrastructure and health information technology (HIT) to enhance communication among people living with a serious illness, their caregivers, and their clinicians and to enable healthcare services to meet their unique needs, goals, preferences, and values.

Methods: We engaged key stakeholders – patients (n=2), caregivers (n=3), clinicians (n=9), and researchers (n=3) – in the codesign and rapid prototyping of an electronic pre-visit survey (PVS) and a point-of-care dashboard. The team used user-centered and engineering design methods to identify user needs and context, to design prototypes, and to assess the ability of HIT solutions to enable prototypes. We worked with our health system's electronic medical record (EMR) development team to design and evaluate prototypes within the outpatient setting of a rural academic medical center.

Results: The dashboard is a visual display that combines patient- and clinician-generated information in one view that is accessible to both patients and care team members. The dashboard is populated in advance of the visit by patients and caregivers completing a PVS that helps set the agenda for the visit. Dashboard functions include (1) facilitating communication within each visit to focus on what matters most; and (2) improving the quality and efficiency of care by capturing, sharing, and displaying data collected before and during a clinic visit. The pre-visit survey includes questions with free-text response options, and validated patient-reported outcome measures. The dashboard design was optimized to support the development of a coproduced care plan built around the patient's most pressing concerns, goals, and barriers in achieving goals. It was designed and prototyped to be integrated with the EMR.

Discussion: The codesign process accounted for factors that affect patient engagement and integrated those into the functionality and form of the pre-visit survey and dashboard. Prototypes are being evaluated for their ability to support end users in achieving higher value healthcare by improving communication and coordination of care, and focusing on what matters most to patients.

Symposium 20

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DEPRESSION AND SUPPORTIVE ONCOLOGY CARE: WHEN GREATER NEED TRANSLATES TO GREATER RELUCTANCE

James Gerhart, PhD¹, Michael Hoerger, PhD, MSCR², Chandysten Nightingale, PhD, MPH³, Laurie E. McLouth, PhD⁴, Rina S. Fox, PhD, MPH⁵, Sarah Thilges, PhD⁶

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Recognizing a heightened risk of distress among patients with cancer, accrediting bodies now mandate that patients with cancer are screened for psychosocial distress, and provided supportive care when indicated. This symposium presents the results of a program evaluation of a large distress screening program and explores barriers to uptake of psychosocial and supportive care in cancer. Mediation models are presented and suggest that the nature of psychological distress itself and its linkages to avoidant emotion regulation strategies may deter patients from seeking supportive care. The symposium concludes with a discussion of the feasibility of including caregivers to enhance engagement in supportive care when intervening with patients alone may not be feasible.

The first presentation reviews referral patterns to psychosocial oncology and supportive care in an academic cancer center. Of 3,370 patients approached for screening, 325 declined (9.6%). Completed PHQ-4s were obtained from 2,506 patients (74.4% of original sample). Of these, 470 met screening criteria for significant distress (18.8% of those screened/13.9% of sample), and 165 (33.4% of those with distress) were referred to psychosocial oncology. Of the total sample, 4.9% received referral to psychosocial oncology. This rate of referral approximates estimates of yearly psychotherapy uptake in the general population.

The second presentation provides insight into plausible barriers to care with an emphasis on the intersectionality of stigma, shame and avoidant coping. Data are presented from an international survey of 598 patients with a history of cancer. Patients with higher levels of depression reported greater inhibition of emotional expression that in turn predicted more reticence to seek supportive care. One interpretation is that at increasing levels of distress patients are less willing to report distress (e.g., decline screening), and/or seek supportive services (e.g., denied referral).

The third presentation explores an alternative avenue for intervening with the caregiving system. This approach involves a web-based intervention that's being delivered to caregivers during their time in clinic to identify their unmet needs and connect them with supportive care resources in the hospital, community, and nation-wide. Feasibility data and preliminary outcomes from 16 patient-caregiver dyads will be discussed.

The program ends with a discussion of emerging alternative avenues for addressing supportive care needs, particularly when patients are not amenable to traditional forms of psychotherapy.

1

2:00 PM-3:15 PM

PSYCHOSOCIAL DISTRESS SCREENING AND RATES OF REFERRAL IN AN ACADEMIC CANCER CENTER

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Depression and other forms of psychosocial distress are related to poorer health outcomes for patients with cancer. These poorer outcomes include greater risk of mortality. Accrediting bodies mandate that all patients are screened for psychosocial distress, and provided with referrals and other resources when indicated. Despite guidelines for screening and referral, a number of patients with cancer and elevated levels of distress may be reticent to utilize supportive care services. This study investigated patterns of referral to psychosocial oncology in the context of a comprehensive supportive oncology screening program at an academic cancer center. Patients visiting comprehensive cancer clinics and the chemotherapy infusion center were asked to complete a supportive oncology screening tool based on the Patient Health Questionnaire – 4 Item (PHQ-4), the National Comprehensive Cancer Network Distress Thermometer, and the Patient Reported Outcomes Measurement Information System. In total, 3,370 patients were approached for screening. Although the vast majority agreed to screening, a notable portion declined to participate in screening ($n = 325$, 9.6%). Completed PHQ-4 scores were obtained from 2,506 patients (74.4% of original sample). Of these, 470 met screening criteria for significant distress (18.8% of those screened/13.9% of sample), and 165 (33.4% of those with distress) were referred to psychosocial oncology. Of the total sample of patients who were approached for screening, 4.9% received referral to psychosocial oncology. The rate of referral is comparable to rates of yearly mental health service utilization of U.S. adults more generally. It is also notable that most patients reporting significant distress did not receive referral to psychosocial oncology. Future efforts to evaluate the impact of distress screening programs should systematically track and examine reasons patients and their clinicians decline to initiate referral to psychosocial oncology.

2

2:00 PM-3:15 PM

FEAR OF EXPRESSING EMOTIONS MEDIATES THE ASSOCIATION OF DEPRESSION AND LOWER PREFERENCES FOR PALLIATIVE CARE

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Many patients with cancer who stand to benefit from palliative care are reluctant to consider and utilize services. One possibility is that patients experiencing acute distress may be reluctant to consider palliative care because they fear the consequences of accepting their vulnerable emotions, and expressing them to others. These fears could deter patients from considering and utilizing palliative care services if they fear negative consequences of expressing their emotions to others including supportive care professionals. The current study investigated the associations of depression, fear of emotional expression, and attitudes toward palliative care in a large sample of adult patients with diverse cancer diagnoses ($N = 598$). It was hypothesized that the association between depression and less favorable attitudes toward palliative care would be mediated by fear of emotional expression. Depressive symptoms were strongly associated with higher levels of emotional inhibition ($r = .60$, $p < .001$), and less favorable attitudes toward palliative care ($r = -.20$, $p < .001$). Emotional inhibition was also associated with less favorable attitudes toward palliative care ($r = -.20$, $p < .001$). Mediation modeling revealed a significant direct effect of depression on lower preferences for palliative care services ($B = -1.31$ SE = .56 95% CI = -2.42 to -.20). A significant indirect effect through higher levels of fear of emotional expression was also obtained ($B = -.85$ SE = .34, 95% CI = -1.54 to -.19). These findings provide insight into the possibility that patient with cancer who also experience depressive symptoms may be reluctant to consider supportive care services. This reluctance may be explained in part by difficulty expressing negative emotions. Patients more comfortable expressing their emotional experiences may be more inclined to utilize supportive care. Further study of emotion regulation and expression in cancer settings could inform efforts to enhance patient engagement in supportive care services.

3

2:00 PM-3:15 PM

DESIGN AND EARLY UPTAKE OF THE CAREGIVER ONCOLOGY NEEDS EVALUATION TOOL (CONNECT-L) FOR LUNG CANCER CAREGIVERS

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Background: For cancer patient populations with high distress and low supportive care utilization, intervening with informal (unpaid) caregivers may be a promising strategy to reduce patient distress, support patient care, and improve caregiver wellbeing. Yet the US healthcare system fails to systematically assess and address caregiver needs. To address this gap, we developed a technology-based intervention for routine cancer care to empower and educate caregivers about the benefits of engaging in supportive care services, identify unmet needs, and recommend tailored resources. We are testing the feasibility of this intervention initially in lung cancer (LC) patient-caregiver dyads.

Methods: Our interdisciplinary team reviewed common unmet supportive care needs in LC caregivers and compiled a database of local and national resources. An advisory panel comprised of a thoracic oncologist, nurse navigator, and psycho-oncology professionals reviewed the needs assessment and resource database. Through an iterative process engaging the advisory panel, informaticists, and videographers, we developed CONNECT-L, a website with an educational video, needs assessment, and algorithms to support tailored resource recommendations and optional automated referrals to services. We are conducting a pilot randomized controlled trial of 40 LC caregiver-patient dyads assigned to CONNECT-L or a minimally enhanced usual care control group. Dyads complete assessments pre-randomization (T0), 1-month post- (T1), and 3-months post-CONNECT-L (T2).

Results: CONNECT-L includes a 1.5 minute video, 17-item needs assessment, and database of 100 resources. To date, 16 patient-caregiver dyads have been recruited (accrual=8/month; participation=64%). Caregivers are on average 62 (SD=5.7) years of age, majority female (68.8%), Caucasian (87.5%), and a spouse/partner to the patient (75%). The majority of patients have stage IV (62.5%) cancer and are receiving chemotherapy (with or without immunotherapy) (75%). Seven caregivers have received CONNECT-L, taking on average 11 minutes to complete (range=8-18). All caregivers endorse at least one need; cancer education is the most common need (71%; $n=5$).

Conclusions: Preliminary findings suggest LC caregivers desire connection to supportive resources and support the potential of technology-based interventions in clinic to reach caregivers. Future analyses will describe adherence to referrals, study retention, and overall acceptability of CONNECT-L.

Symposium 21

2:00 PM-3:15 PM

1

2:00 PM-3:15 PM

INNOVATIVE METHODS FOR STUDYING AND ADDRESSING ENGAGEMENT IN JUST-IN-TIME ADAPTIVE INTERVENTIONS FOR HEALTH BEHAVIOUR CHANGE

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The goal of just-in-time adaptive interventions (JITAI) for health behaviour change is to provide the right type of support to users, at the right time. For example, smokers attempting to quit may benefit from receiving an intervention at a moment when they are at high risk of lapse. Engagement is logically necessary for health behaviour change interventions to be effective; however, engagement with digital interventions tends to be low. As JITAI are highly personalised and adaptive, they may offer a promising solution to the observed 'engagement crisis'. Nevertheless, JITAI have their own engagement challenges. For a JITAI to successfully deliver support at the right time, users are not only expected to engage with momentary interventions but are also required to engage with frequent (e.g. daily, hourly) real-time assessments of psychological, physiological and contextual factors. Low engagement with such real-time measurements can drastically reduce the JITAI's ability to detect future moments of vulnerability and limit researchers' and practitioners' ability to estimate intervention effects.

This symposium will bring together an international team of speakers with expertise in the design and evaluation of JITAI for smoking cessation, alcohol reduction, weight loss and physical activity. First, we will outline different engagement challenges pertaining to digital interventions in general, and JITAI in particular. We will then provide four examples of innovative methods for studying engagement in JITAI. The first talk (Dr. Olga Perski) will highlight ways in which JITAI may offer a promising solution to the 'engagement crisis', drawing on data from a series of N-of-1 studies with users of an alcohol reduction app. The second talk (Dr. Guillaume Cheavance) will outline a computational model of habituation (i.e., an objective decline in behavioural response to the intervention over repeated exposure) in JITAI. The third talk (Dr. Stephanie Goldstein) will discuss the associations between engagement patterns and the proximal and distal outcomes of a JITAI for eating behaviour. The fourth talk (Dr. Emily Hébert) will discuss the use of machine learning to identify patterns of response fatigue in a JITAI for smoking cessation. In the final part of the session, Prof. Eric Hekler will discuss the implications of these innovative methods for building potent JITAI, and how they can help answer broader scientific questions such as why engagement matters.

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CAN JUST-IN-TIME ADAPTIVE INTERVENTIONS OFFER A PROMISING SOLUTION TO THE 'ENGAGEMENT CRISIS' IN DIGITAL BEHAVIOUR CHANGE INTERVENTIONS?

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Background: The frequency and intensity of engagement with digital behaviour change interventions (DBCIs) are likely to influence their effectiveness. However, engagement with DBCIs tends to be suboptimal: in trials of web-based health interventions, on average, only 50% of participants engage as intended by the intervention developers. This observed 'engagement crisis' is problematic as engagement is positively associated with successful behaviour change. Emerging evidence from studies harnessing ecological momentary assessments (EMAs) of users' behaviours and cognitions in real-time highlights that engagement is dynamic (i.e. it fluctuates over time) and manifests idiosyncratically. Just-in-time adaptive interventions (JITAI) harness self-reported and automatically detected data on psychological, physiological and contextual variables with a view to providing the right type and intensity of support to individuals, at the right moment in time. As such, JITAI are by design highly tailored to users' unique and evolving needs.

Objective & Methods: This presentation will draw on findings from a series of qualitative and quantitative studies involving apps for alcohol reduction and smoking cessation to i) illustrate the 'engagement crisis' in DBCIs and ii) discuss why, how and for whom JITAI may offer a promising solution.

Results: Findings from think aloud, interview and focus group studies involving different DBCIs suggest that many of our current DBCIs are not sufficiently tailored to users' unique situations. Evidence from a series of N-of-1 studies harnessing twice-daily EMAs with users of an alcohol reduction app indicates that within-person variability in the state of engagement can be predicted by daily fluctuations in users' motivation to change and perceived usefulness of the app. On the basis of these findings, a potential JITAI could, for example, push a funny/stern/empathetic message at a moment in time when a user's perceived usefulness of the app is low.

Conclusion: Taken together, these findings highlight the potential of JITAI to promote the intensity and frequency of engagement with DBCIs. Hence, not only does future work involving the development and evaluation of JITAI have the potential to advance behaviour change science and practice, but it also has the potential to advance the science of engagement with DBCIs.

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HOW TO PREVENT INTERVENTION HABITUATION IN DIGITAL HEALTH BEHAVIOR CHANGE INTERVENTIONS? A COMPUTATIONAL FRAMEWORK FOR JUST-IN-TIME ADAPTIVE INTERVENTIONS

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Introduction: Digital behavior change interventions (DBCIs) use alerts such as push notifications to promote users' daily engagement with health behaviors. Estimates indicate that individuals receive 60 to 100 notifications per day and tend to ignore them over time, thus challenging their utility for engendering behavior change. A common pattern of results observed in the literature is that digital interventions result in short-term behavioral improvements, which are not sustained. This phenomenon matches on to the classic psychological concept of habituation, i.e., an objective decline in behavioral response to a repeated delivery of a stimulus (in this case, an intervention). One way of addressing this engagement issue is to foster the development of just-in-time adaptive interventions (JITAs), defined as interventions aiming to provide the right type of support at the right moment in time. JITAs could mitigate this habituation issue by dynamically adapting the amount and type of support to individuals' evolving needs. However, there has yet to be a conceptual framework to help researchers understand and anticipate the habituation issue within DBCIs, specifically JITAs.

Purpose: The purpose of this presentation will be to: (1) report on computerized simulations grounded in basic models of habituation at various timescales (i.e., daily, weekly, monthly), with empirical data from an existing DBCI promoting walking as validation; and (2) report simulation results from a computational model intended to guide decision-making within a JITAI, explicitly meant to counteract habituation.

Method: For the first objective, concrete hypotheses about the habituation phenomenon are translated into a system of mathematical equations and then simulated and refined using MATLAB. To address the second objective, a computational model manipulating various scenarios (i.e., quantity and type of intervention) is used to simulate habituation, to help guide future JITAI decision-making.

Expected results: These analyses will help visualize and improve our understanding of the habituation phenomenon within DBCIs and JITAs. The computational model will also enable more robust dynamic theory-generation to help guide future JITAI development.

Discussion: Habituation to notifications is a common issue in DBCIs. A conceptual framework is necessary to understand this engagement issue and, ultimately, build effective JITAs able to counteract or limit habituation.

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IDENTIFYING RESPONSE FATIGUE AND NON-COMPLIANCE IN JUST-IN-TIME ADAPTIVE INTERVENTIONS: A MACHINE LEARNING APPROACH

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Significance: Ecological momentary assessment (EMA) allows for a more granular understanding of the relationship between affect, socioenvironmental context, and smoking lapse. EMA involves frequent measurements in an individual's natural environment, reducing recall bias that is characteristic of self-report instruments. Yet, there is no gold standard method of validating EMA reports of momentary smoking. Lack of adherence to self-initiated event reporting and participant response fatigue (i.e., when the quality of the data provided begins to deteriorate in association with participant burden) can lead to misclassification of smoking lapse or abstinence. The purpose of this study is to use machine learning methods to identify response fatigue and predict non-compliance with EMA protocols.

Methods: Participants were adults from a clinic-based smoking cessation program. Participants were loaned smartphones and prompted to complete 5 EMAs each day from 1 week pre-quit to 4 weeks post-quit, and to self-initiate an EMA whenever they lapsed. EMAs evaluated mood, smoking urge, environmental context, and smoking lapses. Meta data from EMA reports (e.g., participant time in study, average time to complete each question, grade reading level, etc.) were used as potential indicators of participant engagement and response fatigue. Gradient boosted decision trees with k-fold cross validation were used to predict EMA completion and response time.

Results: A total of 29,618 scheduled EMAs and 8,582 participant-initiated EMAs were included for analysis. Participants completed 81.3% of all prompted EMAs. Predictive features included question type, number of times a question has been seen, order of questions, and participants' median response time. Final models, including practical suggestions for identifying response fatigue will be discussed.

Conclusion: Accurate identification of momentary smoking episodes and their context is crucial for the development of effective just-in-time adaptive interventions for smoking cessation. The methods discussed herein may be effective in identifying patterns of non-compliance and fatigue that can be used to refine future EMA study protocols.

EXAMINING PATTERNS OF ENGAGEMENT WITH A SMARTPHONE-BASED JUST-IN-TIME ADAPTIVE INTERVENTION FOR DIETARY LAPSES: IMPLICATIONS FOR PROXIMAL AND DISTAL OUTCOMES

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Background: Deviations from the prescribed diet (i.e., dietary lapses) in behavioral obesity treatment are frequent and associated with poor weight loss outcomes. Given that lapses are triggered by momentary changes in psychological, physiological, and environmental factors, they may benefit from an intervention that promotes self-assessment of triggers and delivers preventative intervention directly in moments of need (e.g., just-in-time adaptive intervention [JITAI]). As such, we developed a smartphone-based JITAI that utilizes ecological momentary assessment (EMA; repeated sampling using electronic surveys) to facilitate self-reporting of lapse triggers, predicts lapses using machine learning, and delivers alerts to lapse risk with brief tailored intervention to prevent lapses. Given the established importance of user engagement with mobile health interventions, the aim of this secondary analysis is to evaluate the association between weekly engagement with the two main JITAI components (i.e., EMA and opening risk alerts), and the hypothesized proximal (i.e., lapses) and distal (i.e., percent weight loss) outcomes.

Methods: Participants (N=121) with overweight/obesity (MBMI =34.51; 84.3% female; 69.4% White) used our JITAI along with a digital weight loss program for 10 weeks. Engagement with JITAI components (i.e., EMA, proportion of opened risk alerts) was recorded automatically, participants self-reported dietary lapses via EMA, and weighed weekly using Bluetooth scales.

Results: Generalized linear mixed models revealed that higher weekly engagement with EMA ($B=.47, p=.001$) and proportion of opened risk alerts ($B=.44, p=.02$) were associated with greater weekly percent weight losses. Higher weekly engagement with EMA ($B=6.03, p<.001$), but not proportion of opened risk alerts ($B=.35, p=.63$), was associated with more self-reported dietary lapses.

Discussion: Findings highlight the importance of JITAI engagement in evaluating proximal and distal outcomes. While causality is unclear, JITAI component engagement was associated with better weekly percent weight loss. This pattern of results was not found for dietary lapses, possibly because participants who were more engaged with the JITAI were also more adherent to reporting lapses. Future studies should untangle the direction of these associations and investigate other potential explanatory variables (e.g., motivation) that may govern both intervention engagement and adherence to weight control strategies.

USING DIGITAL HEALTH INTERVENTIONS TO PROMOTE HEALTHY HABIT FORMATION

Tammy Stump, Ph.D.¹, Ashley B. West, MS², PETER Pirolli, Ph.D., FNAI³, David E. Conroy, PhD⁴, Bonnie Spring, PhD⁵, Angela F. Pfammatter, PhD⁶, Samuel L. Battalio, n/a¹, Nabil Alshurafa, PhD¹, Donald Hedeker, Ph.D.⁷, Necole Streeper, MD⁸, Edison Thomaz, ECE⁹

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Digital health technologies provide new opportunities to help users form healthy habits and to better understand the complex dynamics of habit formation. Habit theories posit that repetition of behavior in consistent contexts is key to attaining a new habit. However, traditional health interventions rely on retrospective reports of behavior and, therefore, do not provide the fine-grained information needed to assess and intervene on this habit formation process. In contrast, due to the nearly ubiquitous nature of digital technologies in daily life, digital health interventions can make use of detailed information about users' contexts (e.g., location, physical state) and past behavior in determining when and how to intervene. This information also holds promise for yielding new insights on how habits are formed and maintained over time.

In this symposium, three talks will provide examples of how digital health technologies can be implemented to promote habit formation and provide insight on the habit formation process. First, a novel intervention designed to increase fluid consumption habits among kidney stone patients will be presented. This intervention utilized a connected water bottle, smartwatch, and smartphone application to provide context-sensitive hydration reminders, producing increases in habit strength for hydration (as measured by perceived automaticity) that persisted at a 3-month follow-up. The second presentation will focus on computational models designed to assess the dynamics of habit formation during a technology-assisted diet and physical activity intervention which used behavior change techniques designed to produced habit formation (e.g., implementation intentions). These computational models assessed habit formation using a dual-systems approach in which behavior is first guided by controlled goal-striving processes but, with repeated practice, later becomes automatic. Ways in which these models can help to refine theories of habit formation, self-efficacy, and intended effort will be discussed. The third presentation will review evidence that behavior consistency serves an important marker of habit formation. This talk will review evidence on how consistency in context, timing, and levels of behavior predict health behavior changes that persist over time. The presenter will also discuss how digital health tools can be used to assess these forms of consistency to improve the efficiency and efficacy of digital health interventions. The discussant will provide an integrative overview of the opportunities and challenges of using digital health technologies to promote habit formation.

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BEHAVIORAL CONSISTENCY AS A MARKER OF HABIT FORMATION WITHIN DIGITAL HEALTH INTERVENTIONS

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The goal of many health interventions is to produce healthy habits that persist over time. Traditionally, intervention success is determined by whether, on average, an individual has met a criterion level of behavioral improvement. An assessment of intervention outcomes in this manner is agnostic to whether the behavior change represents the formation of a new habit that is likely to persist over time. Evaluation of habit formation during interventions could provide new insights on which interventions are most likely to produce changes that maintain over time and could even guide decisions about intervention tailoring during adaptive interventions. While some studies have applied measures of the perceived automaticity of behaviors to assess habit formation over time, we posit that this measurement method is problematic because: 1) self-reports of automaticity rely on a degree of introspection that is likely unrealistic, and 2) the behaviors of interest in health interventions tend to be composed of multiple sub-behaviors, which vary in terms of the degree of automaticity that can be expected to be achieved or is desirable.

New opportunities to assess habit formation during behavior interventions have emerged from the use of technology-assisted interventions. Because these interventions often provide a rich assessment of behavior through repeated self-monitoring and passive assessments, these studies hold promise for determining the behavioral patterns that indicate when a new healthy or unhealthy habit has emerged. Specifically, the intensive longitudinal data yielded by digital health tools permits evaluation of the consistency of behavior in terms of context, timing, and amount of the behavior. Drawing on habit theories, in this presentation, we review the evidence for consistency in these three domains being important predictors of behavior. This review will feature past empirical studies, such as those using frequency-in-context measures of habit formation and ecological momentary assessment methods, including our own past research indicating that a successful intervention led to an increase in behavioral consistency uniquely for targeted behaviors. Potential methods for assessing consistency of context, timing, and amount of behavior using digital health tools will be discussed along with the potential applications of these measures to improve the efficiency and efficacy of digital health interventions.

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SIPIT: A DIGITAL HEALTH JUST-IN-TIME INTERVENTION TO INCREASE FLUID CONSUMPTION HABITS AMONG PATIENTS WITH KIDNEY STONES

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Background: Guidelines recommend that patients with kidney stones consume enough fluids to produce at least 2.5L/day of urine to prevent a recurrence of a stone, yet less than 50% of patients adhere to this guideline. Not being thirsty and forgetting to drink are barriers to adherence so we developed the sip^{IT} intervention to support habit formation for fluid intake. The sip^{IT} intervention combines semi-automated tracking of fluid intake with context-sensitive behavior change techniques to strengthen habits for fluid consumption. Reminder notifications were delivered after every half hour when patients did not achieve prespecified fluid intake goals. This study used a single-group pre-post design to evaluate changes in habit strength (behavioral automaticity) and perceived barriers to adherence.

Methods: Patients with a history of kidney stones and iPhones ($N=31$, $M_{age}=40.0$) were provided with a connected water bottle, smartwatch and the sip^{IT} mobile app for their smartwatch and iPhone, and were encouraged to drink at least 4oz every 30 minutes. Patients completed the behavioral automaticity scale from the Self-Report Habit Index and reported barriers using a checklist at baseline, one and three months.

Results: Completion rate was high for the intervention (84%, $N=26$). Habit strength for fluid consumption increased ($F[2,24] = 7.80$, $p = .003$, $d = 0.69$), with significant change occurring between baseline and one month ($p = .006$) that was maintained at three months. Forgetting to drink and lack of thirst were less common barriers to fluid consumption. Most patients (85%) perceived sip^{IT} helped them achieve their fluid consumption goals.

Conclusions: Habit strength for fluid consumption increased while using the sip^{IT} tools and patients accepted the intervention. Digital health interventions that include semi-automated tracking and context-sensitive behavior change techniques are feasible. Randomized controlled trials are needed to determine the efficacy of this intervention for improving clinical outcomes.

3

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COMPUTATIONAL COGNITIVE MODELS OF HABIT ACQUISITION IN DIGITAL HEALTH

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Our research on the Fittle+ mobile health systems use *scaffolding interventions* to provide support for the acquisition and maintenance of healthy habits. The Fittle+ systems have core multi-week programs to improve eating and physical activity with individualized daily goals. Computational models have been developed using the ACT-R theory of cognition and fit to data collected on the dynamics of behavior change and habit formation in two Fittle+ experiments that were shown to successfully change behavior. The first model was fit to individual-level data from $n=65$ adults in a 28-day experiment showing significant improvements in daily goal achievement when goals are algorithmically personalized. The second model was fit to individual-level data from $n=64$ adults in a 28-day experiment demonstrating significant effects of implementation intentions and the moderating effects of reminders. The models refine current psychological theories of *self-efficacy*, *intended effort*, *implementation intentions*, and *habit formation*.

The theory and models assume that habits are gradually learned through the association of specific behaviors to triggering cues in the environment. There are dual systems involved in habit acquisition and strengthening. First, a deliberative or controlled goal-striving process motivates and guides seminal attempts at behavior in the relevant contexts. Second, habit learning and strengthening processes form new habits through repeated practice, and habitual behaviors eventually are executed without effortful, controlled, goal striving. Habit formation typically depends on a long period of goal-mediated, consciously controlled, exploration, repetition, and practice of behavior. Well-practiced habits occur automatically without mediating goals, motivation, or deliberative thought.

Fine-grained predictive models will need to be developed to better predict and control dynamic digital health interventions. Progress in predictive modeling will lead to the development of user modeling approaches for precision behavioral medicine. This also opens up a path for scientific psychology that extends laboratory-developed theories and models out into real-world in vivo experiments.

Symposium 23

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HOW BEHAVIORAL SCIENCE CAN PLAY A ROLE IN THE INTER-CONNECTION BETWEEN DIET AND CLIMATE CHANGE

Brie Turner-McGrievy, PhD, MS, RD¹, Christopher Gardner, PhD², Jillian Ryan, B Psych (Hons), PhD³, Melanie Hingle, PhD, MPH, RDN⁴, Helen Harwatt, PhD⁵

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The recent report on climate change and land commissioned by the United Nations and developed by the Intergovernmental Panel on Climate Change (IPCC) called for substantial changes in global land use, agriculture, and human diets. Climate change is one of the most pressing public health issues that we will face. The IPCC report stressed that significant changes in consumer behavior will be required to prevent future worsening of the climate. Changes recommended by the report include strategies such as wasting less food and persuading more people to shift their diets away from meat and to encourage “(t)he consumption of healthy and sustainable diets, such as those based on coarse grains, pulses and vegetables, and nuts and seeds.” This dietary shift “presents major opportunities for reducing greenhouse gas emissions” but will require significant shifts in current dietary behaviors. Behavioral scientists are well-positioned to develop effective and evidence-based strategies to promote dietary shifts that can help prevent further climate change. This symposium, comprised of US-based and international scientists, will present an overview of how dietary choices impact climate change and discuss effective behavioral interventions that have successfully helped individuals to transition to more plant-focused diets. The symposium will discuss the challenges in changing dietary behaviors, including addressing cultural traditions, taste preferences, cost, and regional cuisines. The session will conclude with a discussion around strategies that behavioral scientists can use to promote adoption of diets lower in greenhouse gas emissions. In addition, the panel will discuss current policy and research gaps in this area and strategies for filling those gaps going forward.

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THE NUTRITIOUS EATING WITH SOUL STUDY: BEHAVIORAL STRATEGIES FOR FACILITATING ADOPTION OF PLANT-BASED DIETS

Brie Turner-McGrievy, PhD, MS, RD¹, Marian Botchway, PhD², Mary Wilson, MPH², Marty Davey, MS, RD², Anthony Crimarco, PhD¹, Sara Wilcox, PhD¹, Edward Frongillo, PhD², Angela Murphy, PhD²

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Background: The recent EAT-Lancet report on Food, Planet, and Health emphasized a switch from animal-based to plant-based diets (PBD), benefiting both planetary and human health. There are barriers that make shifting to a more environmentally friendly diet difficult. The Nutritious Eating with Soul (NEW Soul) study aims to help participants adopt PBD as part of a 24-month randomized behavioral nutrition intervention for African American (AA) adults.

Objective: To provide an overview of the behavioral strategies used to facilitate adoption of PBD and present qualitative feedback on factors that promoted adoption of PBD from participants' perspectives.

Methods: Participants were randomized to follow 1 of 2 healthy, plant-focused versions of a soul food diet (vegan or omnivorous) and attended group meetings/cooking classes. For the qualitative study, men and women from the first cohort were eligible to participate. The Unified Model of Vegetarian Identity (UMVI) was used as the conceptual model for the qualitative study and helped inform question development.

Results: AA adults (n=158, 20% male, mean age of 48.2±10.6 y, mean BMI of 36.9±7.0 kg/m²) enrolled in NEW Soul. Strategies used in NEW Soul to facilitate adoption of PBD included 1) collaborating with AA soul food community chefs/restaurant owners to provide cultural adaptations of PBD that are palatable and familiar and provide hands-on cooking demonstrations; 2) bringing in AA experts in health, emotional eating, and religion to address dietary-related issues that are specific to the AA community; 3) partnering with local non-profit FoodShare, which provides affordable access to fresh fruits and vegetables; 4) hiring AA community members to serve as facilitators that lead group discussions with participants around diet challenges they face; 5) providing numerous sources of information and support, including face-to-face meetings, private Facebook groups, and podcasts. In our qualitative study, themes that emerged related to facilitators of dietary change included awareness of diet choices, being in control, family support, and influencing others to be healthier.

Conclusions: The NEW Soul study uses numerous strategies, including partnering with local soul food restaurants and chefs, to deliver an intervention that helps to address barriers to adopting PBD related to culture, cost, cooking skills, and taste.

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STEALTH NUTRITION – PROTEIN AT THE INTERSECTION OF SOCIAL JUSTICE AND HEALTH ISSUES AMONG COLLEGE STUDENTS

Christopher Gardner, PhD¹

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Many college age young adults are currently interested in social justice issues, and some of this involves being at an age of ongoing identity formation. Protein lies at the intersection of environmental sustainability, animal rights and welfare, and dietary health, and thus involves social justice issues that are accessible topics of interest to anyone that eats—including students who frequently eat in college dining halls.

We recently published a review of dietary protein that covers requirements, recommendations, plant vs. animal protein, current intake, and the impact of protein sources on greenhouse gasses (GHG) emissions, water use, and human health. The review proposes decreases in overall protein intake and a shift to greater proportion of plant to animal protein, and models the beneficial impacts on GHG, water, and health. This background and these connections have been used in a *Food and Society* class at Stanford University that resulted in a publication about reported changes in student eating behaviors.

Student eating behaviors can be studied in campus dining halls. This requires collaboration between researchers, dining hall operators, chefs, and more. This novel type of collaboration has been emerging in colleges and universities around the country. Led by founders from Stanford University and the Culinary Institute of America, there are now more than 60 universities in the US that have joined the Menus of Change University Research Collaborative (MC-URC) (<https://moccollaborative.org>). Pilot protocols are typically developed at a single university, and then an invitation is opened to the other member universities to help in replicating the research protocols. The MC-URC organization is now 5 years old, and publications from this research are beginning to appear in peer reviewed journals.

One of the major themes of MC-URC is the Protein Flip. The “flip” refers to putting more plant food and less meat at the center of the plate – vegetables, nuts, beans and grains at the center of the plate as the main item, with meats in smaller portions, and as condiments or side dishes. These could be vegetarian or vegan, but they could also just be less meat, better quality meat. What has been very rewarding is working with chefs and keeping a focus on great taste and appearance so that we keep, or put back, the essential ideas of joy and pleasure in eating food.

It is also rewarding and inspiring to work with engaged Gen Z'ers who are passionate about social justice issues, and have many meals ahead of them. Changing social norms for these college aged students has the tremendous potential of influencing their families, friends and colleagues, hopefully leading to a Tipping Point that will align future global eating behaviors with the vision of a Great Food Transformation and a Planetary Health Diet as proposed in the 2019 EAT-Lancet report.

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TESTING THE RELATIVE EFFECTIVENESS OF HEALTH, PRICE, SUSTAINABILITY, AND ANIMAL WELFARE MESSAGES IN PERSUADING MEAL CHOICE: A DISCRETE CHOICE EXPERIMENT.

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Although the impact of food intake on individuals' physical health is well-understood, recent reports have also recognised the overconsumption of calories, packaged foods, and animal-source products as key drivers of climate change and the biodiversity crisis. The convergence of diet as a causal factor for multiple wicked problems offers novel opportunities to harness consumers' internal motivations to nudge towards more ideal food choices. The current study aimed to gain a greater understanding of the relative effects of different meal attributes on meal choice, with a focus on the influence of emerging values relating to climate change and animal welfare. Australian adults (N=2,040) participated in a discrete choice experiment that was embedded in a self-administered online survey. Respondents made nine selections between two hypothetical meals, each of which varied on four attributes: healthiness, price, carbon emissions (as marker of environmental sustainability), and animal welfare, each with three levels (best, moderate, worst). Binary logistic regression was performed to ascertain the effects of the four attributes on meal choice. The model was statistically significant, $\chi^2(8) = 442.094$, $p < .0001$, explained 41.0% (Nagelkerke R²) of the variance in meal choice, and correctly classified 64.3% of cases. All four attributes were significant ($< .001$), positive predictors of meal choice, meaning that higher values of each attribute were associated with increased likelihood of meal choice. Across the sample, meal healthiness had the strongest and carbon emissions the weakest influence on meal choice, regardless of participant age, sex, or socio-economic status. Specifically, results showed improvements in meal selection odds of 3.1 for every one-unit increase in meal healthiness, followed by animal welfare (OR 2.5), cost (OR 1.8), and carbon emissions (OR 1.7). Subgroup analyses showed that the comparative influence of the attributes differed depending on participant socio-demographic characteristics. Notably, marked differences were observed between males and females on impact of animal welfare (females OR 3.1, OR males 1.9) and differences in the influence of price based on income (low-income OR 2.0, high-income OR 1.6). Taken together, results suggest messages emphasising the health and animal welfare characteristics of meals may be the most persuasive for consumers. On the other hand, carbon emissions had the least influence on meal choice, which may reflect the prevalent climate change scepticism attitude or the distal nature of climate change consequences. Understanding the changing values and motivations behind consumers' food choices is something that can be achieved through choice experiments and is essential to maximising the impact of public education campaigns targeting human health and environmental sustainability.

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EATING OUR WAY TO A SAFE PLANET: ADDRESSING THE ENVIRONMENTAL BURDENS OF FOOD SYSTEMS

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The Scientists' second warning to humanity provides a stark picture of the burgeoning environmental problems upon us, and the urgency required in providing solutions. The goal of this presentation is to provide an overview to behavioural scientists about the role of food systems. Our food choices make a major contribution to creating environmental burdens, and reconfiguring them to align with planetary restoration is essential. Agriculture is the major driver of transgressing beyond a safe operating space for land use change, biosphere integrity (wildlife loss), and biogeochemical flows (the nitrogen and phosphorus cycles); and is a significant contributor to surpassing a perceived safe level of anthropogenic greenhouse gas emissions contributing to climate change. I present the main ways that food systems have contributed to the unsafe state of four Planetary Boundaries: climate change, land use change, wildlife loss, and the nitrogen and phosphorus cycles (nutrient pollution). I identify solutions for reducing the burden of the food system on the four Planetary Boundaries, and how our food choices can also play a crucial role in restoring healthy ecosystems and meeting the goals of the Paris Agreement climate change treaty. I close with a proposal for a three step strategy for feeding a growing population while minimising pressure on the four Planetary Boundaries, which could be adopted by individual consumers, institutions, businesses and policy makers.

Symposium 24

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NOVEL BRAIN HEALTH INTERVENTIONS FOR OLDER ADULTS

Ana-Maria Vranceanu, PhD¹, Ryan Mace, MS², Jonathan Greenberg, PhD¹, Katherine Hall, PhD³, Kathi L. Heffner, PhD⁴, Jonathan W. King, PhD⁵

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Within the last century, we have witnessed a dramatic increase in the proportion of older adults. As people are expected to live longer, brain health – maintaining brain structure and function over the lifespan – has become a national priority. While the leading predictors of brain disease, age and genetics, are not yet modifiable, mounting evidence suggests that behavioral interventions can modify lifestyle risk factors. In line with SBM's 2020 annual meeting theme: "Finding Innovative Solutions for Tomorrow's Challenges", this symposium brings together novel interventions aimed at preserving and optimizing brain health and performance with advancing age, which we organized according to the National Institute of Aging stage model. First, *Ryan Mace* will discuss the development of "Active Brains", the first group mind-body physical activity program aimed at improving emotional, physical and cognitive function in older adults with chronic pain and cognitive impairment. "Active Brains" was developed through a mixed methods approach that integrated quantitative and qualitative data from 26 older adults. *Jonathan Greenberg* will present proof of concept trial data from adults (N = 20) enrolled in "My Healthy Brain," a group program aimed to preserve brain health and prevent cognitive decline through evidence-based lifestyle changes. *Katherine Hall* will report findings from a pilot RCT (N = 54) that tested a supervised exercise program for older veterans with PTSD (M age = 67.7; 83% African American) to reduce unhealthy lifestyle behaviors and cognitive impairment. *Kathi Heffner* will share results from an RCT (N = 110) in dementia caregivers that support the use of cognitive training (specifically targeting visual-based speed of processing) to enhance older adults' stress adaptation capacity and healthy aging. *Jonathan King* will place these development studies within the larger context of evidence-based behavioral medicine interventions for cognitive aging, and discuss future directions in brain health research.

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THE ACTIVE BRAINS PROGRAM: ADDRESSING CHRONIC PAIN AND MEMORY PROBLEMS IN OLDER ADULTS

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Chronic pain and memory problems often cooccur in older adults, and the prevalence of both are expected to increase alongside longer life expectancy. Chronic pain uniquely contributes to memory problems and their cooccurrence can decrease psychosocial functioning through the use of ineffective coping strategies (e.g., pain catastrophizing and avoidance). In the absence of available non-pharmacological treatments, there is an unexplored opportunity to teach sustained, pain management habits before cognitive decline with aging. This presentation will introduce *Active Brains* as the first group mind-body physical activity program aimed at improving emotional, physical, and cognitive function in older adults with chronic pain and memory problems. *Active Brains* was developed through a mixed methods approach that integrated quantitative and qualitative data from older adults (N = 26) with chronic pain and memory problems who participated in semi-structured focus groups. Thematic analyses revealed four main themes to tailor *Active Brains* to patient needs: (1) specific challenges of living with chronic pain and memory problems, (2) perspectives on increasing physical activity using a Fitbit, (3) thoughts on *Active Brains* skills (e.g., mindfulness, pain reappraisals, behavioral reinforcement), and (4) anticipated barriers to program adherence. Correlational analyses of self-report measures indicate that pain (numerical rating scale), physical functioning (PROMIS), cognitive complaints (eCOG), and emotional well-being (PROMIS, UCLA Loneliness) are interrelated and associated with disability (r range with the WHODAS = 0.63 to 0.83). In contrast, higher self-efficacy in managing pain (PSEQ) was significantly ($p < 0.001$) associated with decreased disability ($r = -0.90$), sleep disturbance (PSQI, $r = -0.75$), depression ($r = -0.70$), anxiety ($r = -0.67$), cognitive complaints ($r = -0.57$), and loneliness ($r = -0.52$). Complementary mixed-methods results suggest that an integrative approach, such as *Active Brains*, is needed to address chronic pain and memory problems. Older participants were interested in combining mind-body skills with mild physical activity (via Fitbit) to improve psychosocial functioning and provided critical feedback to inform treatment adaptations. Future trials are warranted to determining the feasibility, acceptability and efficacy of *Active Brains* in this population for improving physical, cognitive, and emotional functioning.

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THE ‘MY HEALTHY BRAIN’ PROGRAM: PROMOTING BRAIN HEALTH THROUGH LIFESTYLE CHANGES

Jonathan Greenberg, PhD¹, Ryan Mace, MS², Ethan G. Lester, PhD², Ana-Maria Vranceanu, PhD¹¹Massachusetts General Hospital/Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, Boston, MA

Over the last decade there has been a proliferation of research that provided a paradigm shift in our understanding of brain health and performance across the lifespan. Specifically, we now know that lifestyle factors and cognitive reserves are protective against cognitive decline as we age. However, individuals interested in preserving brain health and preventing cognitive decline face numerous barriers to adopting healthier lifestyles and building cognitive reserves, such as lack of scientifically based educational information, challenges with setting goals and sustaining motivation, and mental health concerns (e.g., depression, loneliness, anxiety). As such, we need to develop brain health interventions aimed at bypassing these barriers and improving both lifestyle factors and cognitive reserve. In response to this need, we developed *My Healthy Brain*, an 8-week group program to promote a healthy lifestyle (e.g., diet, exercise, alcohol, sleep, social support) and build cognitive reserves (e.g., learn memory compensatory strategies). Here we report on a proof of concept, open trial of this novel program, to determine the feasibility, acceptability, and effect sizes of improvement after group participation in adults with self-reported concerns about cognitive decline. Twenty-four adults participated in 4 groups. Eighteen participants provided post-test (75%). Eighty-seven % of participants were “mostly” or “very” satisfied with the program. Rates of heavy/hazardous drinking reduced from 44% at baseline to 29% at post-program. The percentage of participants who meet the World Health Organization (WHO) recommendations for physical activity (600 weekly metabolic-equivalent minutes) increased from 58% to 81%. Participants improved eating, self-efficacy, distress, anxiety and overall satisfaction with life (ES=.45-.59). Results support a randomized controlled trial of this program, as well as longitudinal assessments on objective and subjective cognitive functioning over time.

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EXPLORING THE EFFECTS OF SUPERVISED EXERCISE ON COGNITIVE FUNCTION AND SLEEP IN OLDER VETERANS WITH PTSD: A PILOT RANDOMIZED CONTROLLED TRIAL

Katherine Hall, PhD¹, Christi Ulmer, PhD², Miriam Morey, PhD², Jean Beckham, PhD³¹Durham VA Health Care System, Durham, NC; ²Durham VA Healthcare System, Durham, NC; ³Durham VA Healthcare System

Posttraumatic stress disorder (PTSD) is prevalent among older veterans and associated with poor lifestyle behaviors (e.g., physical inactivity, sleep disturbance) and impaired cognitive function. Previous studies have reported benefits of exercise on cognition in older adults, but this has never been tested in the context of PTSD. Fifty-four older Veterans with PTSD (N=54; M age=67.6; male = 94%) were randomized in a 2:1 ratio to either a 12 week Warrior Wellness exercise program (WW; N=36) or wait-list usual care (W-L; N=18). WW participants engaged in supervised exercise sessions 3 days per week. Memory complaints were assessed using the Frequency of Forgetting (FOF) Scale derived from the Memory Functioning Questionnaire. Sleep was assessed with the PSQI and PSQI-PTSD Addendum questionnaires. In this pilot study underpowered for efficacy, we examined effect sizes for evidence of a “signal” for exercise on memory relative to usual care. Factors associated with 12-week changes in FOF were also examined using bivariate correlation analyses. Forty-eight participants completed assessments at baseline and 12 weeks. At baseline, mild-to-moderate memory complaints were reported by 84% of the sample (FOF score < 6), and 16.7% reported major memory problems. Comparison across conditions revealed a small, negative effect (MD=-0.25, Cohen's d=-0.41 [95% CI -0.64,0.15]) for exercise on self-reported memory problems compared to W-L. Participants in WW showed a small decrease of -0.10 on the FOF (indicative of more memory complaints) across 12 weeks, compared to W-L which demonstrated a small increase of 0.15. Between-group effects for sleep parameters ranged from small to moderate, favoring exercise. In the total sample, improvements in memory complaints over 12 weeks were significantly associated with reduced PTSD symptom severity ($r=-0.34$, $p<0.05$) and improvements in sleep ($r=-0.35$, $p<0.05$). Contrary to our hypothesis, 12 weeks of supervised exercise did not confer any benefits to self-rated memory in older veterans with PTSD. Improvements in sleep with exercise were associated with reduced memory complaints over 12 weeks, suggesting a possible mediation pathway. Future exercise studies of longer duration with more sensitive measures of cognitive function appear warranted in this population with substantial memory and sleep deficits.

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COMPUTERIZED COGNITIVE TRAINING FOR CAREGIVERS OF A LOVED ONE WITH DEMENTIA: TARGETING FLUID COGNITIVE ABILITIES TO ENHANCE STRESS ADAPTATION AND HEALTHY AGING

Kathi L. Heffner, PhD¹¹University of Rochester Medical Center, Rochester, NY

The chronic emotional stress of caregiving for a loved one with Alzheimer's disease or related dementia (ADRD) accelerates aging-related declines in cognitive and immune function. Premised on evidence for neurobiological integration of cognition, emotion, and physiological stress regulation, we are currently conducting a National Institute on Aging-funded randomized controlled trial (RCT) to determine whether visual speed of processing and attention (VSOP/A) training will strengthen caregivers' capacity for stress adaptation, and, ultimately, slow immune aging. Discussed here is preliminary work that supported the trial, as well as an ancillary analysis of trial data, that together provide support for our premise that targeting fluid cognitive abilities holds potential as a means to enhance stress adaptation. In an observational laboratory study, we found that among community-dwelling adults over 50 years of age, ($N=110$; $M(SD)$ age = 60.5(8.4), worse cognitive performance (e.g., processing speed, attention, working memory) was associated with markers of poorer stress regulation, including maladaptive heart rate variability and negative affect response to acute stressors, and higher circulating levels of plasma interleukin-6, a marker of inflammation. To subsequently test a causal role for fluid cognitive ability in stress adaptation, stressed ADRD caregivers are currently being randomized to an 8-week VSOP/A training or video education control intervention. Cognitive function, emotion regulation, heart rate variability, and immune measures are assessed at baseline (T1) and then immediately (T2), 6 months (T3), and 12 months following the intervention period. Using ancillary data from $n=104$ caregivers 50-85 years of age ($M(SD)$ age = 68.8(7.8)) who have completed assessments through 6 months, we find evidence from linear mixed modeling that VSOP/A training enhances performance on a demanding working memory task (group \times time: $F(2, 75)=4.3$, $p=.02$; VSOP/A: T1 mean(SE)=32.4(.86); T2 mean(SE)=34.6(.88); T3 mean(SE)=35.6(1.01); Control: T1 mean(SE)=32.7(.90); T2 mean(SE)=34.1(.94), T3 mean(SE)=32.5(.99)) suggesting better cognitive performance during an acute psychophysiological stressor. Together, this evidence suggests that targeting fluid cognitive abilities via computerized cognitive training, a self-administered, home-based intervention, may benefit stress adaptation, including cognitive resilience to stressors, in caregivers of a loved one with dementia.

Symposium 25

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ENGAGEMENT OF LATINOS IN BEHAVIORAL INTERVENTION TRIALS: EVIDENCE FROM THE FIELD, LESSONS LEARNED, AND BEST PRACTICES

Lisa Goldman Rosas, PhD, MPH¹, Dara Sorkin, PhD², Larkin Strong, PhD, MPH³, Patricia Rodriguez Espinosa, Ph.D., M.P.H.⁴, Elva M. Arredondo, Ph.D.⁵¹Stanford University, Palo Alto, CA; ²University of California, Irvine, Irvine, CA; ³University of Texas MD Anderson Cancer Center, Houston, TX; ⁴Stanford School of Medicine, Palo Alto, CA; ⁵San Diego State University, San Diego, CA

Latinos are the largest racial/ethnic minority group in the US and they are disproportionately represented among those with chronic disease such as diabetes and cardiovascular disease. Latinos accounted for approximately half of the US population growth over the last two decades and are expected to reach over 100 million by 2050. The Latino population is also aging more quickly than any other racial/ethnic group in the US. A high prevalence of obesity and other risk factors such as physical inactivity among Latinos underscore the urgent need to develop innovative, efficacious, and scalable chronic disease prevention interventions for this population. Despite this need, Latinos are underrepresented in behavioral lifestyle intervention trials. NIH data show that fewer than 8% of enrollees in clinical trials are Latino. In trials that focus on Latinos, study recruitment, engagement in the intervention, and retention remain challenges. In this symposium we will present evidence from 5 behavioral lifestyle intervention trials to provide lessons learned and best practices for recruiting, engaging, and retaining Latino participants in behavioral lifestyle intervention trials:

1. Lisa Goldman Rosas (chair) will present evidence to inform best practices for engaging Latino men based on the HOMBRE study, a comparative effectiveness trial of two approaches to weight management among Latino men ($n=424$) in primary care.
2. Dara Sorkin (Co-presenter) will discuss challenges and solutions to engaging Latina women in a weight loss intervention from the Unidas por la Vida study that recruited mothers with type 2 diabetes and their overweight/obese adult daughters ($n=721$).
3. Larkin Strong (Co-presenter) will present data on recruitment strategies from the Tu Salud, ¡Si Cuenta! trial that is recruiting adult Latino family dyads ($n=458$) to test the effectiveness of a family-based physical activity and nutrition intervention.
4. Patricia Rodriguez Espinosa (Co-presenter) will present data from two physical activity intervention trials with Latinos, COMPASS2 ($n=245$) and On The Move ($n=350$) that used targeted bilingual mailings for recruitment.

Overall, we will provide evidence from engaging approximately 2,200 participants to equip attendees with lessons learned and best practices for engaging Latinos in chronic disease prevention trials. Elva Arredondo, and expert in Latino chronic disease prevention, will serve as a discussant for the symposium.

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THE HOMBRE TRIAL: ENGAGING LATINO MEN IN A BEHAVIORAL LIFESTYLE INTERVENTION FOR WEIGHT MANAGEMENT

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Background: Approximately 40% of Latino men are obese, however, they are drastically underrepresented in trials testing behavioral interventions for obesity. Understanding Latino men's preferences for behavioral interventions is critical for engaging this underrepresented group.

Methods: We examined preferences for engaging in a behavioral intervention for weight loss among 202 Latino men who were randomized to receive the HOMBRE intervention in a comparative effectiveness trial based in primary care. The HOMBRE intervention included a coach-facilitated choice among three options: in-person coach facilitated group, online coach facilitated group via video conferencing, and self-directed using online videos. All three options provided the same evidence-based behavioral lifestyle intervention that included 12 weekly sessions and 9 monthly phone calls. We examined demographic, technology access/use, psychosocial, and clinical factors associated with men's intervention preferences. We also examined men's engagement in the in-person and online group sessions.

Results: Participants were middle aged (avg 47.3 yr + SD 11.8), educated (77% attended some college), employed full or part time (86%), and had access to a computer (90%) and smartphone (97%). Intervention preferences were: 40% in-person groups, 38% self-directed online videos, and 22% online groups. The majority preferred to engage in the intervention in English (71%) vs Spanish (29%). Those who chose in-person groups were more likely ($p < 0.05$) to have lower education, be retired or unemployed, speak Spanish only, be less acculturated, and not have access to a computer or tablet compared to those who chose the two technology-mediated options. There was no significant difference ($p > 0.05$) in choice according to clinical factors such as body mass index, blood pressure, depression symptoms, or psychosocial factors such as overall and obesity-specific quality of life. There was no significant difference ($p > 0.05$) in class attendance between the in-person and online groups. Overall in both groups 86% attended >25%, 82% attended >50%, and 58% attended >75% of the classes.

Conclusion: Demographic and computer access differences were significantly associated with preferences for engaging in a behavioral intervention among Latino men. Providing options that accommodate the diversity of Latino men's preferences is important for increasing engagement in behavioral interventions.

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INSIGHTS FROM THE UNIDAS POR LA VIDA RESEARCH STUDY ABOUT ENGAGING LOW-INCOME WOMEN IN A DYADIC BEHAVIORAL WEIGHT LOSS INTERVENTION

Dara Sorkin, PhD¹, Laura Prieto, BA², Ariana Martinez, M.S.², Anne Escaron, Ph.D.², Joceline Porron, B.A.², Daniela Macias, B.A.¹, Maribel Cervantes-Ortega, M.S.³, Jessica Solares, MPH², Karen Rook, PhD¹

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Background: Longitudinal community-based prevention programs have been shown to positively impact weight loss and improve diabetes control in participants with type 2 diabetes. Although these programs have proven to decrease participants' average baseline weight by 4%, recruitment and retention of low-income minority groups remain challenging. Engagement strategies are critical factors in recruiting and maintaining participation in year-long health intervention programs. We present strategies developed during the recruitment and retention phases of an NIH-funded diabetes behavioral intervention program targeting low-income Latina women recruited from federally qualified health centers (FQHCs).

Methods: Prospective participants, mothers with type 2 diabetes and their overweight/obese adult daughters (N=721), were identified from seven sites across two FQHCs. Latinas were invited to participate in the dyadic weight loss intervention via clinic appointments, telephone calls, and mailed letters. Participant contact notes and data were examined to identify obstacles to engagement, and tailored messages were developed to promote participation in the research study and in group classes and follow-up assessments at 6 and 12 months.

Findings: Common barriers to participation in the research study included lack of time, transportation difficulties, family and work obligations. Common barriers to participation in group classes included participants' work hours, family obligations, financial struggles, secondary issues including, physical and mental health stressors, health literacy, and transportation. To overcome some of these common engagement and participation barriers we prioritized building credibility, being flexible with our scheduling, addressing hesitation, personalizing their experience throughout all study communications with participants, and increasing incentives and assisting with transportation, where feasible.

Conclusions: By adopting this approach, we achieved recruitment goals. Nonetheless, participation in group classes remained lower than desired. Recruiting and retaining research participants from under-resourced communities requires the commitment of additional resources (e.g. financial, personnel) to promote and support participation across all phases of the program.

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RECRUITMENT OF LATINOS FOR A DYADIC FAMILY LIFESTYLE INTERVENTION STUDY: EXPERIENCES FROM THE TU SALUD, ¡SI CUENTA! TRIAL

Larkin Strong, PhD, MPH¹, MinJae Lee, PhD², Shaili Bhavsar, BS³, Tianlin Xu, MPH⁴, Jemima John, PhD⁵, Lorna McNeill, PhD, MPH⁶, Margaret Goetz, MD⁷, Susan Schembre, PhD, RD⁸, Deanna Hoelscher, PhD, RDN⁹, Belinda Reininger, DrPH¹⁰

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Background: Researchers have increasingly advocated for lifestyle interventions with Latinos to incorporate an explicit focus on the family, yet few studies engage multiple family members, and the feasibility of recruiting Latino family members into a clinical trial is unclear. Tu Salud, ¡Si Cuenta!/Your Health Matters is an ongoing RCT testing the effectiveness of a 6-month family-based physical activity and nutrition intervention for adult Latino family members, compared to a contact control. This presentation will describe experiences recruiting predominantly low-income and Spanish-speaking adult Latino family dyads into a behavioral intervention study and will examine demographic and study-related characteristics associated with enrollment outcomes.

Methods: Prospective participants (e.g., aged 18-70 years, not meeting physical activity or fruit and vegetable recommendations) are recruited from community sites (e.g., community centers, community events, churches, schools) in three predominantly Latino communities in Houston, TX by bicultural research staff and community health workers. Chi-square tests were performed to evaluate associations of dyad and individual factors with enrollment outcomes in screened and eligible dyads.

Results: To date, 930 individuals have been screened for eligibility, and 542 individuals were eligible to enroll as 271 dyads (39% spouses, 36% parent/child, 11% siblings, 14% other relationships). Of these eligible dyads, 52% completed a baseline assessment, 23% cancelled or did not show up for their baseline assessment, and 25% could not be reached after initial recruitment. These enrollment outcomes were not significantly associated with dyad relationship or individual age or gender but were significantly associated with recruitment source ($p=0.001$). For example, among eligible dyads recruited from community events, 63% enrolled in the study compared to 46% from community centers. Enrollment outcomes were also associated with neighborhood of residence ($p=0.02$): study enrollment ranged from 43% of eligible dyads in one neighborhood to 69% in another.

Conclusions: Recruiting family dyads for a lifestyle intervention added extra steps to the process, and success varied by neighborhood and approach. Identification of factors associated with enrollment outcomes is critical for the refinement of recruitment approaches to more effectively engage underserved populations in culturally appropriate chronic disease prevention research.

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USING TARGETED MAILINGS TO RECRUIT LATINO AND OTHER UNDERSERVED ADULT POPULATIONS FOR BEHAVIORAL HEALTH INTERVENTION TRIALS

Patricia Rodriguez Espinosa, Ph.D., M.P.H.¹, Ines Campero, BA², Michele Escobar, Social Science Research Coordinator¹, Abby C. King, PhD³

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Latinos, the largest racial/ethnic minority group in the US, are disproportionately affected by chronic conditions (e.g., diabetes, cancer) compared to non-Latino Whites. Nonetheless, this population continues to be underrepresented in randomized controlled trials (RCTs). We describe the use of targeted mass mailings as a strategy for recruiting Latinos and other groups into behavioral RCTs. Issues in using targeted mass mailings include obtaining targeted mailing lists adapted for the population of interest, representativeness of samples obtained, and tracking of response rates. We describe how this strategy was used in two successfully completed RCTs for increasing physical activity among older Latinos -- the COMPASS2 trial (N=245) and the On The Move Trial (N=350). Both NIH-funded trials were conducted in the San Francisco Bay Area. As part of recruitment activities, potentially eligible community residents received targeted bilingual mass mailing materials. We will present data on the proportion of participants enrolled in each trial in response to this, vs. other, recruitment approaches (e.g., community outreach, referrals) and their percent participation during the intervention compared to the other strategies used. We also present insights from an ongoing RCT, Steps for Change (n=250). In this trial, ethnically diverse, low-income residents were randomly mailed two different types of recruitment letters -- a more standard letter describing the study, or an adapted, more personal letter that highlighted potential benefits of study participation for others and the community. We hypothesized that residents, given values of personalism and collectivism, would be more likely to respond to the latter version. Preliminary analysis indicates a modest, non-significant preference towards the adapted letter - 157 letter responses vs. 136 for the more standard letter (X2 [2, n = 328] = 3.38, $p=.18$). Full results will be presented. We will also address benefits of using targeted mass mailings (e.g., ability to reliably project response rates over time), and challenges, including costs and staff time needed for screening and tracking. As the US continues to become increasingly diverse, optimizing research recruitment methods for racial/ethnic populations is a key priority in order to accelerate health equity-related science.

Symposium 26

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NEW EVIDENCE FOR PSYCHOLOGICAL AND OTHER NON-PHARMACOLOGIC APPROACHES FOR MANAGING CHRONIC PAIN

Christine M. Rini, PhD¹, Susmita Kashikar-Zuck, PhD², Lynn DeBar, PhD MPH³, Francis J. Keefe, Ph.D.⁴¹Northwestern University Feinberg School of Medicine, Chicago, IL; ²Cincinnati Children's Hospital Medical Center, Cincinnati, OH; ³Kaiser Permanente Washington Health Research Institute, Seattle, WA; ⁴Duke University, Durham, NC

The individual and public health impact of chronic pain is clear and pressing. People who live with chronic pain are at elevated risk for depression and have impaired functioning in their daily life, including in valued roles involving family, social, and work activities. Many use medications to help manage their pain, but these treatments often cause undesirable symptoms and toxicities. Non-pharmacologic therapies such as exercise and psychological pain interventions (e.g., those applying principles of cognitive behavioral therapy, or CBT) can help people manage chronic pain and do not cause unwanted side effects, making them an important component of multidisciplinary pain care. In fact, they are a recommended part of various pain treatment guidelines despite being underused in clinical pain care. The studies described in this symposium extend evidence on these therapies in ways that can optimize their efficacy and advance their use in clinical care. The first speaker will evaluate current research on psychological and exercise-based treatments for pediatric chronic pain; describe a novel intervention approach that combines these therapies to optimize their efficacy in children with juvenile fibromyalgia syndrome; and describe how to design studies to improve understanding of brain mechanisms underlying pain in pediatric populations. The second speaker will describe the findings and lessons learned from a recently completed large scale pragmatic trial that embedded a multidisciplinary team within primary care clinics in several areas of the country to deliver a combined CBT and yoga-based movement program to patients with chronic pain on long term opioid therapy. This speaker will also describe intervention elements that have been adapted for sustained use in these settings. The third speaker will describe a study that showed changes in people's selection of adaptive and maladaptive pain coping responses after completing pain coping skills training, which her team delivered to people with osteoarthritis in a self-directed, web-based program. The study used a novel research method to elicit pain coping strategies participants would use in situations likely to increase their pain, comparing responses in the intervention group to those in a control group to yield evidence for mechanisms underlying benefits of pain coping skills training. The Discussant, an internationally-recognized expert in non-pharmacologic pain management, will synthesize evidence from the talks and highlight and future directions in this line of research.

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WEB-BASED PAIN COPING SKILLS TRAINING CHANGES COPING STRATEGIES PEOPLE WOULD USE IN HYPOTHETICAL SITUATIONS LIKELY TO INCREASE PAIN

Christine M. Rini, PhD¹, Ariana Katz, MPH², Ada Nwagugbo, MPH³, Laura S. Porter, PhD⁴, Tamara Somers, PhD⁵, Francis J. Keefe, Ph.D.⁶¹Northwestern University Feinberg School of Medicine, Chicago, IL; ²RTI International; ³US Government Accountability Office; ⁴Duke University Medical Center, Durham, NC; ⁵Duke University School of Medicine, Durham, NC; ⁶Duke University, Durham, NC

Background: Pain coping skills training (PCST) helps people manage persistent pain with evidence-based cognitive and behavioral skills such as relaxation, distraction, activity pacing, and positive coping thoughts. Evidence shows that PCST can reduce pain and related impairment. The assumption is that it does so by changing the coping strategies people identify as potential responses to life situations that may increase their pain, including more adaptive strategies such as relaxation and activity pacing and fewer maladaptive strategies such as avoiding valued activities and overuse of pain medication. We tested this assumption in people with osteoarthritis (OA) who completed a self-directed, web-based PCST program previously found to be efficacious in this population. At baseline and post-intervention they completed a novel research task that elicited the types of pain coping strategies they would use in situations likely to exacerbate pain. We examined changes in adaptive and maladaptive pain coping strategies identified by the web-based PCST group compared to changes in strategies identified by a control group.

Methods: 107 people with hip or knee OA and associated pain enrolled in a 2-arm randomized trial in which they completed either a highly interactive, 8-session, self-directed web-based PCST program or study assessments with no PCST (control condition). In baseline and post-intervention assessments, we presented participants with four vignettes describing hypothetical situations likely to increase OA pain. After each vignette, they had 2 minutes to describe how they would prevent or manage OA pain in that situation. Trained staff coded their audio-recorded responses to count discrete mentions of specific adaptive and maladaptive pain coping strategies. Participants also reported their perceived risk for increased pain in each situation and their self-efficacy for controlling and avoiding pain in the described situation and future situations.

Results: Compared to the control group, the web-based PCST group became less likely to identify maladaptive behavioral pain coping strategies ($p = .002$) and more likely to identify at least one cognitive pain coping strategy ($p = .01$) at post-intervention. They also demonstrated greater reductions in perceived risk for pain ($p = .03$) and greater improvements in self-efficacy ($ps < .001$).

Conclusions: Findings demonstrate possible cognitive and behavioral mechanisms through which people with OA may benefit from completing web-based PCST.

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INTEGRATING PSYCHOLOGICAL AND EXERCISE-BASED THERAPIES IN NOVEL WAYS FOR THE TREATMENT OF CHRONIC MUSCULOSKELETAL PAIN IN PEDIATRIC POPULATIONS

Susmita Kashikar-Zuck, PhD¹¹Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Safe and effective non-pharmacologic treatments that have strong and sustained effects are urgently needed for the proper management of chronic widespread musculoskeletal pain in children and adolescents. The objectives of this presentation are to 1) critically evaluate current research on psychological and exercise-based treatments for pediatric chronic pain, 2) highlight a novel combined intervention approach that has the potential for greater pain reduction and functional restoration than prior treatments using new research in juvenile fibromyalgia syndrome (JFM) as a model, and 3) describe how such treatment studies can serve as a vehicle for enhancing our understanding of the mechanisms of chronic musculoskeletal pain in pediatric populations. The speaker will discuss how a novel approach to exercise – neuromuscular training, derived from injury prevention research and focusing on improving body biomechanics and movement competence can be used in combination with coping skills training to reduce pain and disability in JFM. The group-based Fibromyalgia Integrative Training for Teens (FIT Teens) program potentially has stronger effects on pain and disability in JFM than previously studied non-pharmacologic treatments. Early results show strong improvements in self-reported pain and disability after treatment. Moreover, objectively measured improvements are seen in physical ability using technologically advanced methods including 3-dimensional motion capture of movement biomechanics. A large multi-site RCT of the FIT Teens program is ongoing. The potential for incorporation of technological advancements such as motion capture and virtual reality into behavioral treatments for chronic musculoskeletal pain will be discussed. Finally, treatment studies of this type can be used to probe the underlying brain mechanisms of chronic pain and its treatment and point the way for exciting new research directions in pain management.

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CHANGING CLINICIAN AND PATIENT BEHAVIOR AS A MEANS OF PROMOTING EVIDENCE BASED BEHAVIORAL MANAGEMENT STRATEGIES FOR CHRONIC PAIN MANAGEMENT IN PRIMARY CARE SETTINGS.

Lynn DeBar, PhD MPH¹¹Kaiser Permanente Washington Health Research Institute, Seattle, WA

This talk will discuss behavioral, psychological, and healthcare system factors that affect the readiness of clinicians and patients with chronic pain to communicate about and work in partnership to optimize patients' motivation and follow through in adopting nonpharmacotherapeutic strategies for chronic pain management. The speaker will utilize examples from her and her close collaborators' recent and current NIH- and PCORI-funded studies (both pragmatic trials and multi-method evaluations of US policy initiatives) promoting and evaluating patients' uptake of evidence-based behavioral interventions and complementary and integrative health approaches to manage chronic pain within a variety of busy everyday primary care settings. Further, the speaker will summarize primary outcome findings and lessons learned from a recently completed large scale cluster randomized pragmatic clinical trial of an interdisciplinary behavioral intervention embedded in primary care for chronic pain management. The trial included 850 patients with chronic pain on long term opioid treatment from across three regions of the country (Pacific Northwest, Georgia, Hawaii). Patients in the intervention arm sustained larger reductions in pain impact over follow-up, .47 greater reduction at 3 months, .49 at 12 months. Significant differences between study arms over time for opioid use were not observed. Overall, the findings suggest that a primary care-based behavioral intervention to develop self-management skills helped patients receiving long term opioid treatment for diverse chronic pain conditions. The intervention produced modest but significant and sustained reductions in pain impact, pain-related disability, and benzodiazepine. Effects were achieved in routine primary care using frontline clinicians.

Symposium 27

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PROGRESS IN BEHAVIORAL ONTOLOGIES AND IMPLICATIONS FOR BEHAVIORAL MEDICINE

William T. Riley, Ph.D.¹, Alexander J. Rothman, Ph.D.², Christine M. Hunter, PhD³, DAWN A. MORALES, Ph.D.⁴, Susan Michie, BA,MPhil, DPhil⁵, Pól G. Mac Aonghusa, PhD⁶¹National Institutes of Health, Bethesda, MD; ²University of Minnesota, Minneapolis, MN; ³Office of Behavioral and Social Sciences Research, National Institutes of Health, Bethesda, MD; ⁴National Institute of Mental Health, Bethesda, MD; ⁵University College London, London, England, UK; ⁶IBM, Carbury, Kildare, Ireland

Behavioral medicine lags behind biomedicine in the development and implementation of controlled vocabularies, taxonomies, and ontologies. These taxonomic structures facilitate research and practice communications, elucidate relations among constructs, encourage data sharing and integration, and provide the basis for a more cumulative science. This symposium will describe various approaches for developing behavioral ontologies and progress in the development of these ontologies. Following a brief introduction to the topic, Drs. Hunter and Morales will describe the range of initial efforts by the National Institutes of Health (NIH) to encourage the development of behavioral ontologies and link these ontologies to existing biomedical taxonomic structures. Dr. Michie will highlight her extensive research program on behavior change taxonomies and recent advances in linking behavior change components to theoretical mechanisms of action. Dr. Pól Mac Aonghusa will describe the synergies between ontologies and artificial intelligence in predicting, explaining and recommending behavioral interventions. The discussant, Alex Rothman, will discuss potential implications of behavioral ontologies efforts on behavioral medicine research and practice.

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PROGRESS ON BEHAVIORAL ONTOLOGIES AT THE NIH

Christine M. Hunter, PhD¹¹Office of Behavioral and Social Sciences Research, National Institutes of Health, Bethesda, MD

The complexity of describing and measuring dynamic human behaviors and social interactions has resulted in a proliferation of terms, constructs, measures and theories in the behavioral and social sciences. For example, it is not uncommon to find the same terms used for different constructs or different terms used for identical or similar constructs. This complexity, combined with the rapidly increasing volume of available data, presents challenges for categorizing, reporting, integrating, and understanding the inter-relationships among variables of interest. This presentation will highlight the efforts of the NIH's Behavioral Ontology Development Working Group to address some of these challenges and advance ontology creation and use across scientific multiple domains. We will describe different approaches to ontology development and our progress in several research domains; including data on the application of natural language processing to capture existing relationships between constructs and measures in PubMed in the domains of self-regulation and resilience. We will also describe our approach to enhance behavioral and social science categorization in Medical Subject Headings (MeSH); the hierarchically-organized terminology for indexing and cataloging articles in PubMed. Finally, we will describe some NIH efforts to build partnerships between behavioral and social science subject matter experts and knowledge representation scientists to accelerate evidence synthesis and support the de-fragmentation of science.

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THE BEHAVIOUR CHANGE INTERVENTION ONTOLOGY: VISION AND DEVELOPMENT

Susan Michie, BA, MPhil, DPhil¹¹University College London, London, England, UK

Evidence about behavioural interventions is currently produced on a vast but fragmented scale and more rapidly than humans can synthesise and access. This presentation will explain the usefulness of ontologies in organising large volumes of complex knowledge about behavioural interventions to synthesise evidence at scale about what works and how to generate new hypotheses about behaviour change. It will present the Behaviour Change Intervention Ontology developed by a large team of behavioural scientists in collaboration with computer scientists and system architects as part of the Human Behaviour-Change Project (HBCP; www.humanbehaviourchange.org). The HBCP is building a prototype of an artificial intelligence system to scan the world literature evaluating behavioural interventions to extract key information and use this to answer queries and generate new insights about behaviour change.

Development of the Behaviour Change Intervention Ontology is by five iterative stages [<https://osf.io/86m75/>]: 1. Identification of key entities and preliminary definitions by searching for relevant terms from existing ontologies and typologies that can be appropriately reused 2. Refinement of the Ontology (through annotating published intervention evaluation reports), 3. international stakeholder review and feedback on comprehensiveness and clarity, 4. Inter-rater reliability testing of assignment of text to ontology categories, and 5. Finalising and specifying relationships within the Ontology. The BCIO comprises a BCI Plan, a BCI Scenario and a BCI Comparison (the evaluation methodology). The upper-level of the BCI Scenario currently has 11 inter-linked entities: Intervention Content (Behaviour Change Techniques and Dose), Delivery (Mode, Source, Schedule), Reach and Engagement, Mechanisms of Action, Context (Setting and Population) and Outcome Behaviour. Each entity has its own ontology and once finalized will be posted on [<https://github.com/HumanBehaviourChangeProject>, <https://www.humanbehaviourchange.org/>].

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ONTOLOGIES MEET ARTIFICIAL INTELLIGENCE

Pól G. Mac Aonghusa, PhD¹¹IBM, Carbury, Kildare, Ireland

As applications of artificial intelligence (AI) technology becomes increasingly ubiquitous in our personal and professional lives, it is easy to forget how complex and opaque the underlying technologies and processes are. In the behaviour change domain, where recommendations from algorithms have real-life consequences for practitioners and patients, the need for transparency and trust in AI systems is particularly apparent. Ontologies are helpful as an organising framework to represent subtle, and sometimes non-obvious, statistical patterns and relationships encountered in AI systems in ways that a human can interpret. This presentation will discuss the successes, challenges and potential opportunities of using ontologies to build interpretable AI systems using the Human Behaviour Change Project (HBCP) as a relevant example. This presentation will also touch on larger questions of trust, transparency, fairness and bias that will become increasingly topical as a topic for interdisciplinary research.

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DEFINING THE “IT” IN DISSEMINATION – CONCEPTUALIZATIONS AND STRATEGIES FOR GLOBAL EFFORTS

Edwin B. Fisher, PhD¹, Kate Lorig, DrPH², Redford B. Williams, M.D.³, Joost Dekker, PhD⁴, Patrick Y. Tang, MPH⁵

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Fidelity and standardization challenge dissemination. To say that a program was successfully transferred from site A to site B, we must first be able to define and measure it. Criteria for standardization and fidelity are seldom written and often based on judgment. Additionally, choices of methods to convey programs through materials, training, program models, certification, licensing, contracts, etc. are not self-evident. This symposium explores these issues through three programs developed in the US that have achieved implementation and effectiveness in other countries. Kate Lorig and her colleagues developed the *Chronic Disease Self Management Program* with great concern for program fidelity amidst the varied definitions and methods addressing self management. Commitment is to effectiveness not depending on setting. Process measures characterize and monitor fidelity. Training is highly regulated through requirements that those implementing the program complete rigorously defined training from individuals certified as master trainers. These requirements are supported by licenses that specify the acceptable use of the protocols and materials the program includes. Virginia and Redford Williams developed *Williams LifeSkills* based on extensive research of their own and others implicating the roles of stress and anger in disease. The program includes 10 modules and protocols for teaching them, with subsequent quality controls. Facilitator trainees initially engage as workshop participants who practice with personal examples, then take turns as facilitators with coaching. During and after this second phase everyone considers suggestions for modification of any aspects of the protocol that retain fidelity but increase cultural sensitivity. Edwin Fisher and colleagues guided *Peers for Progress* to promote peer support as a general approach in prevention and care. Defining peer support are five key functions, e.g., being there, assistance in daily management. The program then encourages varied approaches to addressing these functions, such as with individuals or groups, face-to-face or through varied media including digital apps that may share functions with support from another human. Rather than promoting a specific intervention protocol, the program serves as a clearinghouse for varied intervention materials and resources. Discussion will include the importance of guiding choices among these and other strategies by the objectives and nature of the programs to be disseminated.

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GLOBAL PROMOTION OF PEER SUPPORT: STANDARDIZATION BY FUNCTION, NOT CONTENT

Edwin B. Fisher, PhD¹, Patrick Y. Tang, MPH²

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Recognizing the utility of peer support leads quickly to recognizing its variety. *Promotores*, lay health advisors, peer support specialists, community health workers, and Village Health Volunteers in Thailand provide it, to name a few. They work in health care or social services but also in self-governing mutual support. It happens face-to-face, individually or in groups, by telephone or text, and more recently online. It addresses disease knowledge, information about treatments, problem solving, emotional encouragement, individual and community capacity, or help in finding clinical or other services. Further, when *Peers for Progress* began in 2007 to promote peer support in health care and prevention, there were already many, many peer support programs around the world. An international consultation through the WHO advised recognizing that peer support be tailored to local circumstances, needs, and populations, but to focus global promotion on the key functions of peer support. These emerged as 1) assistance in daily management; 2) emotional and social support; 3) linkage to clinical care and community resources; 4) ongoing availability of support in recognition that the chronic diseases and many other problems for which peer support is helpful are lifelong; and 5) being there from consideration of peer support in dealing with social isolation and loneliness. Development focuses then on how the 5 key functions may be implemented in the context and for the purposes of a particular program. Measuring success of such a general approach is a challenge, but 14 projects funded in 9 countries on 6 continents were able to use the key functions across variation in culture, audience, health systems, and settings and achieved a range of benefits. As a scorecard, the key functions have been useful in understanding some apparent failures. More recently, they have supported thinking of how peer support provided by live peer supporters and that provided by versatile apps may be complementary in combining “high tech and soft touch.” In Shanghai, the key functions have guided applications across primary care and community settings, gaining recognition of peer support as a strategy for achieving the Shanghai Ministry of Health’s 2030 objective of chronic disease self management. *Peers for Progress* sought to promote the general approach of peer support. For this, the emphasis on key functions has served it well.

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MOVING PEER LED SELF-MANAGEMENT PROGRAMS FROM RE-SEARCH TO PRACTICE

Kate Lorig, DrPH¹

¹Self-Management Resource Center, Mountain View, CA

The ideal of most developers of interventions is to have these interventions widely used. In this presentation I will discuss how peer led self-management intervention have moved from ROI to world wide use. Several factors made this possible 1) the original intervention design, including designing for multi-cultural use 2) the choice of outcome measures and how research was presented 3) links with national and international organizations wishing to use the programs 3) training packages that do not depend on the developer, 4) strong fidelity standards, 5) continual updating and 6) a business model allowing for sustainability. All of these will be discussed as well as the pros, cons, and rational for each.

THE WILLIAMS LIFESKILLS PROGRAM – A MEANS OF DELIVERING COGNITIVE BEHAVIORAL STRESS MANAGEMENT AND INTERPERSONAL SKILLS TRAINING IN DIVERSE CULTURES AROUND THE WORLD

Redford B. Williams, M.D.¹, Virginia Williams, PhD in European Intellectual History²

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The Williams LifeSkills (WLS) provides training in 10 skills that enable one to be aware of and evaluate negative thoughts and feelings in distressing situations. One learns to decide between deflection of those thought and feelings or acting to try to change the situation in positive ways. To improve relationships with self and others, focus is on effective speaking, listening, empathy and increasing positives in encounters with self and others. Controlled clinical trials in the U.S. have shown WLS training to decrease psychosocial risk factors and blood pressure in caregivers, medical students, high school students and hypertensive employees. WLS has been adapted for use in Singapore, Hungary, China, Brazil and Colombia. During facilitator training, adaptations were made to retain fidelity and maximize appropriateness of each skill for that country’s culture. The leaders of the teams trained to deliver the WLS program have evaluated the impact of the WLS program on psychosocial factors in their countries. A randomized controlled trial of coronary bypass patients in Singapore found improvements in depression, anger, anxiety, satisfaction with social support and life and SBP and HR, both at rest and during anger recall in those randomized to WLS training. An observational trial of WLS in distressed working persons in Hungary found significant improvements in anxiety, depression, somatic symptoms, coping skills, well-being, life meaning and life satisfaction. Controlled trials of WLS in China found significant improvements in social support, anxiety, depression and self-esteem in medical students, in verbal aggression, auto-aggression and physical aggression scores in young violent offenders, and in behavior problems in left-behind children. Preliminary observational trials of WLS in Brazil and Colombia have shown improvements in psychosocial risk factors. Papers reporting these findings have been published in peer-reviewed journals. This evidence regarding delivery of WLS training in Singapore, Hungary, China, Brazil and Colombia indicates that it is possible to deliver and document effectiveness of a standardized program providing training in cognitive behavioral stress management and interpersonal relationship skills in diverse cultures around the world.

Symposium 30

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FUTURE DIRECTIONS OF BEHAVIORAL MEDICINE: PERSPECTIVES FROM THE NEXT GENERATION

Claudio Nigg, PhD¹, Sasha A. Fleary, PhD², Kellie A. Walters, PhD³, Christine Chard, PhD⁴, Xiaomeng (Mona) Xu, PhD⁵¹Karlsruhe Institute of Technology, Karlsruhe, Baden-Württemberg, Germany; ²Tufts University, Medford, MA; ³California State University, Long Beach, Long Beach, CA; ⁴Colorado State University, FORT COLLINS, CO; ⁵Idaho State University, Pocatello, ID

Behavioral medicine/health is able to explain about 30% of behavior across various topic areas (physical activity, healthy eating, etc.). Innovative ideas are needed to improve on this and to reach vulnerable populations who are at highest risk for chronic diseases. Senior Scientists contribute to the field in having their established research programs, however new and innovative ideas are needed. This symposium will highlight innovative ideas from selected up-and-coming researchers.

Dr. Fleary's research utilizes health literacy to empower underserved children and families to advocate for their personal health and factors affecting health in their community. By collaborating with and designing programs for public libraries, Dr. Fleary is simultaneously promoting the public library as a health space, addressing common barriers to accessing interventions in underserved communities, and centering health literacy as an essential literacy. Dr. Walters' and Dr. Chard's research primarily focuses on developing, implementing, and evaluating Smart Fit Girls (SFG), a non-profit program aimed at promoting positive self-esteem, body image, and physical activity enjoyment in adolescent girls. Recently Dr. Walters and Dr. Chard have engaged in youth participatory approaches to design, implement and evaluate a culturally responsive version of SFG among girls of color. This research is novel as it takes a health positive (e.g., focusing on body positivity and utility rather than weight loss) and youth centric approach to improving adolescent girls' health. Dr. Xu will highlight the importance of interdisciplinary research by discussing the self-expansion model (which originated in the close relationships field within social psychology) and how it has informed our understanding of behavioral health. This will include a review of research demonstrating the positive impact of self-expanding experiences (characterized by novelty, excitement, challenge and/or interest) on smoking cessation, cigarette cue-reactivity, weight control, and physical activity. Dr. Nigg will integrate these research programs in the larger context of health psychology/behavioral medicine and the promise they bring to our field.

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READING, WRITING, HEALTH LITERACY: LIBRARIES AS HEALTH SPACES

Sasha A. Fleary, PhD¹¹Tufts University, Medford, MA

According to a 2016 Pew survey, 53% of Americans 16 years and older had some interaction with public libraries in the last year. The public library is viewed as a safe gathering space that promotes community, a source of trusted information, and a place to help individuals find health information and job opportunities. Further, Latinos, women, and individuals with low incomes were more likely to report that if their neighborhood libraries were to close it would have a major impact on their families. Children and families who are low income and/or otherwise underserved are at increased risk for poor preventive health, low health literacy, and health disparities. Given that the library is an important gathering space for these children and families and already viewed as a source of trusted information and health information, the library is an ideal space for promoting preventive health and teaching health literacy skills. Preventive health practitioners and programmers should work with libraries to reimagine the library's physical space and purpose in the community as it relates to health. This talk will provide an overview of how US public libraries are currently used as "health spaces" and factors impacting their use as such using quantitative and qualitative data from a representative sample of US libraries. Future directions for collaborating with libraries to design and disseminate suitable health literacy and preventive health behavior interventions will be discussed.

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ADDRESSING THE HEALTH OF ADOLESCENT GIRLS USING A NOVEL GIRLS EMPOWERMENT PROGRAM

Kellie A. Walters, PhD¹, Chrissy Chard, PhD²¹California State University, Long Beach, Long Beach, CA; ²Colorado State University

In addition to the physical benefits, individuals who are highly physically active are more likely to have a greater self-esteem, better body image, and increased physical activity self-efficacy. Compared to adolescent boys, girls are more likely to be sedentary and suffer from psychosocial distress, such as anxiety and depression. Current recommendations suggest that adolescents participate in 60 minutes of moderate intensity physical activity per day yet there is a clear ethnic disparity in the prevalence of youth meeting these guidelines with only 17.1% of black girls (compared to 27.6% of white girls, 39.9% of black boys, and 42.6% of white boys).

Much of the research the authors have conducted has been on the development and efficacy of an empowerment program for middle school girls: Smart Fit Girls (SFG). This program is unique because rather than focusing on weight loss, SFG focuses on creating a positive health environment where all girls, no matter their size, shape, color, race, or ability, learn to appreciate their bodies for what they can do (body utility) rather than what they look like (aesthetics). Based in self-determination theory, SFG aims to foster autonomy, competence and relatedness among participants. SFG promotes both the physical and mental health of adolescent girls – a novel approach to health promotion in youth. Preliminary data demonstrate the powerful effect of this program, including improved self-esteem, body image and physical activity enjoyment. Unique aspects of their research include evaluating the program in a variety of settings (after-school, in-school, and a 1 week camp) and the use of youth participatory action research practices in culturally adapting the Smart Fit Girls curriculum. Cultural adaptation of programming is critical. While various programs have been developed to improve the health of adolescent girls, the limited research conducted has been done primarily in white adolescent girls, leaving a clear racial gap in our scientific knowledge base. Therefore, our recent work has explored the unique experiences of Black and African-American girls in regards to their perceptions of self-esteem, body image and physical activity, which has demonstrated a clear need for programming to promote mental health among this population.

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SELF-EXPANSION AND BEHAVIORAL HEALTH

Xiaomeng (Mona) Xu, PhD¹

¹Idaho State University, Pocatello, ID

The self-expansion model (Aron & Aron, 1986) states that people are motivated to engage in experiences that grow the self-concept by increasing perspectives, identities, resources, and efficacy. These experiences tend to be characterized by novelty, challenge, interest, and or/excitement. Initially, research in this area focused on self-expansion within the context of close relationships, elucidating the processes of relationship initiation and maintenance. Recently, research has shown that self-expansion also occurs at the individual level (e.g., outside of close relationships in the context of the workplace, hobbies, and other activities) and is important in a number of domains including behavioral health. Several studies have examined self-expansion and health, focusing on behaviors such as smoking, weight control, and physical activity. This talk will provide a brief overview of the self-expansion model, show the development of this line of research from close relationships to individual processes, and then highlight some of the recent behavioral health studies. First, research on self-expansion and nicotine smoking will be covered. This will include a community study of former and current smokers showing that self-expansion is positively associated with both smoking cessation (among those who successfully quit) and duration of quit attempts (among those who ultimately returned to smoking). Next, functional magnetic resonance imaging (fMRI) neuroimaging studies of self-expansion among smokers will be reviewed. These studies show that self-expansion (in the context of close relationships and utilizing exciting/challenging vs. control video games) attenuates cigarette-cue reactivity in the brains of overnight abstinent smokers. Next, self-expansion studies of behavioral weight loss and physical activity will be reviewed. These studies include daily diary and randomized controlled trial methodology. Results of this longitudinal research indicate that self-expansion is associated with greater self-reported and Fitbit-measured physical activity. Additionally, self-expansion is associated with greater percentage weight loss and likelihood of achieving clinically-significant weight loss outcomes among those in overweight and obese BMI categories. Finally, implications and future directions of self-expansion and behavioral health will be discussed.

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PRENATAL LIFESTYLE INTERVENTIONS AND IMPACT OF OBESITY: THE PAST, THE PRESENT AND THE FUTURE

Rebecca Krukowski, PhD¹, Michelle Cardel, PhD, MS, RD², Suzanne Phelan, PhD³, Leanne Redman, PhD, FTOS⁴

¹University of Tennessee Health Science Center, College of Medicine, Memphis, TN; ²University of Florida, Gainesville, FL; ³Cal Poly, San Luis Obispo, CA; ⁴Pennington Biomedical Research Center, Baton Rouge, LA

This symposium will focus on translational research related to eating behavior, body weight, gestational weight gain, and obesity-related disease outcomes among women of childbearing age and their infants/children. First, Dr. Michelle Cardel will discuss behavioral, environmental, and psychosocial factors influencing adverse eating behavior and risk for obesity and obesity-related diseases among women of childbearing age. Next, Dr. Suzanne Phelan will summarize the effectiveness of prenatal interventions in reducing excess gestational weight gain and preventing postpartum weight retention. She will end by reviewing effects of prenatal interventions on pregnancy complications and childhood obesity and the potential need to intervene during preconception period. Dr. Leanne Redman will end the session discussing new observational data and how this may shape future controlled clinical interventions and implementation trials. Dr. Rebecca Krukowski will be the chair/discussant of the session and will provide a short summary integrating the presentations, make research and treatment recommendations, and lead the question and answer session.

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PSYCHOSOCIAL DETERMINANTS OF EATING BEHAVIOR IN WOMEN OF CHILDBEARING AGE

Michelle Cardel, PhD, MS, RD¹

¹University of Florida, Gainesville, FL

Dr. Cardel will present on the psychosocial determinants that influence eating behavior and the development of obesity among women of childbearing age. The presentation will include a look at under-represented racial/ethnic minority groups and the relationships and potential causal mechanisms driving the relationships between poverty, low social status, stress, and food insecurity on adverse eating behavior and obesity among women. Specifically, she will discuss her research demonstrating that experimentally manipulated low social status is associated with increased caloric intake and 24-energy balance among childbearing women. Additionally, she provides data indicating that food insecurity results in excess caloric intake, which can impact weight-related outcomes over the long term.

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EFFICACY OF PRENATAL LIFESTYLE INTERVENTIONS FOR IMPROVING MATERNAL AND CHILD HEALTH OUTCOMES.

Suzanne Phelan, PhD¹

¹Cal Poly, San Luis Obispo, CA

Dr. Phelan will present the IOM weight gain guidelines for pregnant women and summarize the various lifestyle intervention trials targeting gestational weight gain and maternal and child health outcomes. The objective of this talk will be to demonstrate the effectiveness of prenatal lifestyle interventions for reducing excess gestational weight gain and postpartum weight retention. Dr. Phelan will end with review of the effects of prenatal interventions on pregnancy complications and child obesity and discuss a potential need for preconception intervention.

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LIFESTYLE INTERVENTIONS TO ADDRESS GESTATIONAL WEIGHT AND MATERNAL HEALTH

Leanne Redman, PhD, FTOS¹

¹Pennington Biomedical Research Center, Baton Rouge, LA

Dr. Redman will conclude the session with a talk that discusses the current hypotheses as to why prenatal lifestyle interventions in pregnant women with obesity delivered improvement in gestational weight gain, weight retention, lower C-section rate, among other outcomes. Central to this talk will be a discussion of new observational data related to fertility post bariatric surgery, and how this might shape future controlled interventions and implementation trials.

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DEVELOPING AND TAILORING HIV PREVENTION INTERVENTIONS WITH AND FOR ADOLESCENT AND EMERGING ADULT SEXUAL MINORITY MALES

Kristi Gamarel, PhD¹, Tyrel J. Starks, PhD², Lisa Hightow-Weidman, MD³, Rob Stephenson, PhD¹, Kimberly M. Nelson, PhD, MPH⁴¹University of Michigan, Ann Arbor, MI; ²Hunter College, CUNY, Brooklyn, NY; ³University of North Carolina, Pittsboro, NC; ⁴Boston University School of Public Health, Boston, MA

In the United States, adolescent and emerging adult sexual minority males are disproportionately impacted by the HIV epidemic. Researchers and clinicians have increasingly recognized the importance of developing and tailoring HIV prevention interventions among these priority populations. This symposium therefore brings together interdisciplinary and cutting-edge research that aims to understand how to develop and tailor HIV prevention interventions for these key populations. These projects also seek to identify ways interventions can be readily scaled up into health care services. The presentations included in this symposium consider different intervention modalities (i.e., online vs. in-person) and formats (dyadic vs. individual). They describe developmentally-appropriate content and tailoring; consider the impact of unique forms of conflict and intimate partner violence for intervention research and program planning; and draw on intervention studies at different phases of implementation. The first talk presents preliminary findings from two different ongoing relationship-focused HIV prevention studies which have developed adjunct relationship skill building components to Couples HIV Testing and Counseling (CHTC)—delivered online and in person—to adolescent sexual minority males. The second talk describes the development of an online sexual health promotion intervention that provides adolescents with media literacy tools. The third talk examines manifestations of conflict in counseling sessions with young same-sex male couples focused on HIV prevention and substance use and identifies effective provider strategies for responding to conflict. The final talk presents findings on the unique forms and consequences of intimate partner violence among young sexual minority men in the context of HIV prevention intervention design. The discussion will be led by Dr. Lisa Hightow-Weidman who is a world-renowned researcher with substantial expertise in HIV prevention interventions for adolescents and young adults and will focus on future directions for research, practice, and policy efforts related to reducing inequities in HIV among sexual minority male adolescents and young adults.

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THE IMPORTANCE OF “OPTIONS” IN RELATIONSHIP-FOCUSED HIV PREVENTION EFFORTS: TWO INTERVENTIONS WITH ADOLESCENT SEXUAL MINORITY MALES

Kristi Gamarel, PhD¹, Tyrel J. Starks, PhD², Sarah Feldstein Ewing, PhD³, Sonia Lee, PhD⁴, Travis Lovejoy, PhD⁵, Lynae Darbes, PhD⁶, Lisa Hightow-Weidman, MD⁷, Sylvie Naar, n/a⁸, Patrick Sullivan, PhD, DVM⁹, Rob Stephenson, PhD¹¹University of Michigan, Ann Arbor, MI; ²Hunter College, CUNY, Brooklyn, NY; ³Oregon Health and Science University, Portland, OR; ⁴NICHHD, Bethesda, MD; ⁵Oregon Health & Science University, Portland, OR; ⁶University of Michigan; ⁷University of North Carolina, Pittsboro, NC; ⁸Florida State University, Tallahassee, FL; ⁹Emory University, Atlanta, GA

Background: Young gay, bisexual, and other men who have sex with men (YGBMSM) continue to be disproportionately affected by HIV. Although a substantial number of new HIV infections occur in the context of romantic partnerships, there have been limited biomedical and behavioral intervention efforts designed to address the relational context of HIV prevention with and for YGBMSM in romantic relationships.

Methods: As part of the Adolescent Medicine Trials Network for HIV/AIDS Interventions (ATN), two projects seek to develop and test relationship-focused HIV prevention interventions for YGBMSM and their partners. *We Prevent* is an online intervention delivered via telemedicine nationally whereas, *We Test* is delivered in person in New York City and Detroit. To date, both studies have completed two of the three phases of these implementation science programs (e.g., qualitative interviews and one-arm first-phase studies to inform and refine the intervention content and format for the Phase 3 RCT).

Results: In both studies, YGBMSM ages 15 to 19 completed interviews and a one-arm of each intervention. Phase 1 *We Prevent* themes that led to intervention content included: (1) negotiating sexual consent and boundaries; (2) stigma surrounding sexuality and relationships; (3) monogamy as implied and never explicitly discussed; (4) communication around relationships and HIV prevention. Phase 1 *We Test* formative findings included barriers to Couples HIV Testing and Counseling (CHTC) and relationship dynamics that led to the development of a communication skills video and a brief Motivational Interviewing (MI) focused on Assisting with Identification and Development (MI-AID) in-person. For Phase 2, 6 dyads completed the *We Prevent* one-arm pilot and 12 YGBMSM completed the *We Test* one-arm. Across the studies, participants discussed the importance of communication yet many had difficulty communicating with their partners to complete the sessions. Findings highlighted the need for a menu of delivery options (i.e., individual and dyadic) to accommodate YGBMSM's readiness to engage their partners.

Conclusions: Both studies highlight the value of integrating relationship skills and HIV testing, as well as the provision of options for individual- and dyadic-level participation in order to accommodate the needs and preferences of YGBMSM. The next steps of these projects will be discussed on how to provide YGBMSM with the skills and tools they desire to address HIV prevention in their relationships.

2

2:00 PM-3:15 PM

MOTIVATIONAL INTERVIEWING WITH MALE COUPLES TO REDUCE SUBSTANCE USE AND HIV RISK: MANIFESTATIONS OF PARTNER DISCORD AND STRATEGIES FOR FACILITATING DYADIC FUNCTIONING

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Background: While the efficacy of Motivational Interviewing (MI) to reduce substance use is well-established, its use with couples has had mixed results. The development of such interventions is relevant for same-sex male couples, as rates of substance use in this population are high and use is associated with aspects of sexual relationship functioning. One challenge noted in previous research on MI with couples is how to respond when partners disagree with one another or argue against change. Guided by Couples Interdependence Theory (CIT), our group conceptualized conflicts within session as failures in the accommodation process. We utilized qualitative analysis to examine manifestations of conflict in session and identify effective provider strategies for responding to conflict.

Methods: The sample included 14 cis-male couples where at least 1 partner was aged 18-29; reported substance use; and was HIV-negative. All couples completed 3 MI sessions lasting 60-75 minutes each. Sessions were transcribed and coded for analysis using Dedoose.

Results: Observed conflicts included: conflating thoughts and feelings (expressing thoughts or assumptions as though they were emotions, which often were perceived as blaming and elicited defensiveness), vague or indirect communication (language or signals that were easily misunderstood), and inaccurate assumptions (incorrect inferences about a partner's thoughts or behavior). Effective provider responses included: correcting assumptions (catalyzing disclosure between partners to clarify their attitudes and behavior for one another), shifting focus (to thinking about a preferred past or an ideal future scenario), relationship repair (making amends and moving forward together), "common ground" reflections (which describe shared values and perspectives), and relationship affirmations (which capture relationship strengths and resources).

Conclusions: Observed conflicts aligned with conceptualizations of destructive resolutions to the accommodation process. Elements of both Exit-type resolutions (e.g., blaming or defensiveness), and Neglect-type resolutions (e.g., conflict avoidance or withdrawal) were present. Effective provider responses facilitated dyadic functioning and catalyzed constructive accommodation. Many of these provider responses build upon existing MI skills such as reflections and affirmations; however, they require providers cultivate the ability to direct utterances towards partners individually and the couple as a whole. Use of these provider skills also requires knowledge of dyadic functioning in order to accurately identify and reflect relationship strengths and successful accommodation.

3

2:00 PM-3:15 PM

UNDERSTANDING INTIMATE PARTNER VIOLENCE AMONG YOUNG MALE COUPLES IN THE UNITED STATES: IMPLICATIONS FOR HIV PREVENTION INTERVENTION PLANNING

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Background: Intimate partner violence (IPV) is a prevalent and pressing public health concern that affects people of all gender and sexual identities. Though studies have identified that same-sex male couples may experience IPV at rates as high as or higher than heterosexual couples, the body of literature addressing IPV among adolescent and young adult sexual minority men is nascent. Young sexual minority men face unique stressors in their relationships as they struggle with identity development, disclosure and familial support, and communication in their relationships. This qualitative study explored perceptions of relationship tensions and support among a sample of YGBMSM to guide HIV prevention intervention efforts.

Methods: As part of a larger HIV prevention study for young male couples ("We Prevent"), qualitative interviews were conducted with 30 young men who reported they were in a relationship with another male. In-depth interviews (IDI) were conducted online via video-chat with participants from 17 states in the U.S. Participants were recruited via social media platforms. Interviews focused on communication, relationship strengths and challenges, as well as potential ideas for intervention content that could support the HIV prevention needs of YGBMSM in romantic relationships. Audio data were recorded, transcribed and de-identified. Thematic analyses were used to understand the forms and precipitants of IPV.

Results: Participants' age ranged from 15 to 19 (M=17.8, SD = 1.1) and 48% identified as a person of color. Most identified as gay (83%) or bisexual (13%), and over half of the sample (55%) had been with their partner for less than 6 months. Participants most commonly reported emotional IPV and monitoring and controlling behavior from their intimate male partners, which took the form of judgement, belittling sexual or emotional needs, and power imbalances. While no participants reported physical IPV, several participants reported being pressured to have sex or participate in certain sexual acts. Most participants reported feeling that they lacked the skills to communicate with their partners around sex, boundaries, and consent.

Conclusions: Findings support the importance of attending to IPV in HIV prevention approaches for YGBMSM. Future research and interventions approaches will be discussed on how to address IPV in different HIV prevention intervention modalities.

THE YOUNG MEN & MEDIA PROJECT: DEVELOPING A COMMUNITY-INFORMED, ONLINE HIV PREVENTION INTERVENTION FOR 14-17 YEAR OLD SEXUAL MINORITY MALES

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Background: Adolescent sexual minority males (ASMM) are disproportionately affected by HIV and other sexually transmitted infections (STIs) in the United States (US). Despite increased HIV/STI risk, there is a lack of formal sexual health education resources to prepare ASMM for engaging in healthy sexual activity. Lacking such guidance, ASMM often turn to the Internet, including pornography, to get information about male-male sexual relationships. Although the Internet can be a convenient and affirming source of sexual health information, it can also be unreliable, often providing misinformation or misleading characterizations of male-male sexual relations. The primary goal of the Young Men & Media project is to develop a community-informed, online sexual health program that promotes the critical examination of online media by ASMM in order to promote healthy sexual development and to decrease their sexual risk-taking.

Methods: Two sources of information were used to develop and create the content and form of the intervention website: (1) a cross-sectional online survey of ASMM from across the US ($N = 207$, 14-17 years old) and (2) a Youth Advisory Board ($N = 4-5$, 16-18 years old). Website programming followed an iterative process from initial development/design to alpha/beta testing in collaboration with the Youth Advisory Board and the website developer.

Results: Four main topics areas were identified by youth as important foci for the intervention: (1) male anatomy, including information about how anal sex can be pleasurable and about anal health; (2) HIV/STI prevention information (e.g., transmission risks, accessing testing, condom use); (3) general sexual health information (e.g., types of male-male sex, consent, dating safety, partner communication); and (4) porn literacy (e.g., differences between porn and reality, what's behind the scenes on a pornography set, normalization of porn use among male youth). Youth felt that intervention content should be interactive (e.g., games, videos, animations) and the website should have an interface that would be familiar to ASMM (e.g., similar to Netflix). Youth preferred a website with a responsive design (i.e., will work on a mobile device, tablet, or computer) as opposed to a downloadable phone application.

Conclusions: Sexual health interventions that address the sexual health needs of ASMM are needed to decrease the HIV/STI disparities occurring among these youth. A community-informed, iterative approach to online intervention development with ASMM is likely to result in an intervention that meets the needs and wants of ASMM and, ultimately, may prove to be feasible, acceptable, and effective at preparing them for healthy sexual activity.

FROM STIGMA TO PSYCHOLOGICAL AND BEHAVIORAL HEALTH AMONG POPULATIONS IMPACTED BY HIV

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For people living with HIV (PLWH) and individuals vulnerable to HIV infection (transwomen; men who have sex with men, MSM), stigma is a major driver of behavioral and psychological health risks. Stigma arises from conflict between the norms of dominant, majority groups and members of disadvantaged groups. Both internalized and enacted stigma contribute to elevated psychological stress and dysregulated behavioral responses among PLWH, transwomen, and MSM. Identifying pathways from stigma to psychological and behavioral health in populations impacted by HIV can help illuminate mechanisms driving disparities and opportunities for intervention.

Substance use can impact HIV treatment, and PLWH use substances at greater rates than people not living with HIV. In the first study, results provide evidence that associations between HIV stigma and substance use are partially mediated by depression among PLWH. Both internalized and enacted HIV stigma were associated with depression, and depression was associated with self-reported number of substances used, substance use severity, and testing positive on a drug test. Interventions on substance use among PLWH must consider links among HIV stigma, mental health, and substance use.

For transwomen, discrimination drives elevated rates of mental health issues and creates barriers to affirming healthcare. In the second study, gender identity and sexual behavior stigmas were associated with severe psychological distress. Experiencing gender identity stigma was also associated with higher prevalence of past year suicide ideation and attempts. Structural and interpersonal interventions to reduce experiences of stigma are critical to preventing psychological distress and suicidality among transwomen.

For young MSM of Color, race-based objectification and rejection by sexual and romantic partners contribute to distress and poor coping. In the final study, trait level mindfulness moderated associations of sexual racism with prevalence of depression, suicide ideation with a plan, and non-suicidal self-injury. For MSM of Color who reported greater trait mindfulness, the association between sexual racism and mental health was weaker. Mindfulness is a promising tool for interventions seeking to modify the effects of stigma experienced by young MSM of Color.

Among populations impacted by HIV, experiences of stigma continue to drive disparities in psychological and behavioral health. The studies in this symposium identify potential points of intervention, including depression, gender identity and sexual behavior stigma, and mindfulness, that may be instrumental in improving the health and quality of life for groups often pushed to the margins. By centering these groups and individuals in health care and interventions, psychological and behavioral health disparities can be narrowed and individual disease burdens reduced.

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HIV STIGMA AND SUBSTANCE USE PROBLEMS AMONG PEOPLE LIVING WITH HIV: DO DEPRESSIVE SYMPTOMS MEDIATE?

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In the United States, people living with HIV (PLWH) are affected by substance use problems at higher rates than people not living with HIV. In addition to harming overall mental and physical health, substance use problems undermine HIV treatment and secondary prevention efforts. Research identifying risk factors for substance use problems among PLWH is needed to strengthen HIV treatment and prevention efforts. We examined whether internalized and enacted HIV stigma are associated with three indicators of substance use problems among people living with HIV (PLWH), including numbers of: (1) substances used, (2) substances used at moderate to high risk, and (3) times substances were used before sex, via the mediator of depressive symptoms. Participants included 358 PLWH aged 18-35 from Georgia. At baseline, participants completed measures of internalized and enacted stigma, depressive symptoms, and substance use severity. Substance use was additionally tested via urinalysis. Following baseline, participants reported their use of substances before sex for 28 days via daily text messaging. Data were analyzed using path analysis in R. On average, participants tested positive for 1.24 (range: 0-6) substances used, reported moderate to high risk on 2.01 (range: 0-8) substances, and reported using substances 1.57 (range: 0-20) times before sex over 28 days. Internalized and enacted stigma were associated with greater depressive symptoms, and depressive symptoms were associated with all three indicators of substance use problems. Moreover, the indirect effects between internalized and enacted stigma with indicators of substance use problems were significant, suggesting that depressive symptoms partially mediated associations between stigma and substance use problems. Discussion will identify intervention strategies to address stigma among PLWH to reduce depressive symptoms and substance use problems, ultimately supporting support HIV treatment and prevention efforts.

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GENDER IDENTITY AND SEXUAL BEHAVIOR STIGMAS, PSYCHOLOGICAL DISTRESS, AND SUICIDALITY IN AN ONLINE SAMPLE OF TRANSGENDER WOMEN IN THE UNITED STATES

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Introduction: Studies have consistently documented a high prevalence of adverse mental health outcomes among transgender women in the United States and across the world. Trans-related discrimination limits access to resources in several critical domains (e.g., health care) and serves as a determinant of adverse physical, sexual, and mental health outcomes. Limited scholarship examines how other forms of stigma – including perceived and anticipated stigmas – and stigma due to other socially marginalized attributes or behaviors – including sexuality or sexual behaviors – are associated with adverse mental health outcomes among transgender women. In the present study, we explored associations between perceived, anticipated, and enacted gender identity and sexual behavior stigmas with severe psychological distress, suicidal ideation, and suicide attempts among $N=381$ transgender women.

Methods: Chi square tests were used to compare the prevalence of severe psychological distress, suicidal ideation and suicide attempts across demographic groups, and modified Poisson regression models with log links and robust variance estimators were used to assess unadjusted and adjusted associations between gender identity and sexual behavior stigmas with severe psychological distress, suicidal ideation, and suicide attempts. Covariates included in adjusted models were demographic characteristics that were significantly ($p < 0.05$) associated with the abovementioned three outcomes of interest.

Results: 198 participants (52%) had severe psychological distress, as defined as a K6 score ≥ 13 . In addition, 226 (59.3%) participants reported suicidal ideation in the past year, and 50 (13.12%) reported one or more suicide attempts in the last year.

Overall, participants were young with about half ($n=194$, 50.9%) aged 15-24 years. Most participants were white, non-Hispanic (276, 72.4%) and 44.4% ($n=169$) identified as bisexual or pansexual. Approximately one third ($n=132$, 34.6%) of the sample made less than \$20,000 annually, and nearly 40% ($n=150$) reported attending some college or having an associate's degree.

Treated as scales, gender identity stigma (aPR 1.07, 95% CI: 1.03, 1.11) and sexual behavior stigma (aPR 1.03, 95% CI: 1.01, 1.07) were significantly, positively associated with severe psychological distress. In addition, gender identity stigma was significantly, positively associated with suicidal ideation (aPR 1.09, 95% CI: 1.06, 1.12) and suicide attempts (aPR 1.13, 95% CI: 1.03, 1.26) in the past year.

Conclusion: Gender identity and sexual behavior stigmas are significantly, positively associated with adverse mental health outcomes among transgender women in the United States. Stigma reduction interventions may have the potential to contribute to reductions in adverse mental health outcomes, including severe psychological distress and suicidality among transgender women.

3

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SEXUAL RACISM HURTS, BUT MINDFULNESS CAN HELP: MINDFULNESS MODERATES DISCRIMINATION'S EFFECT ON MENTAL HEALTH FOR BLACK AND LATINO MEN WHO HAVE SEX WITH MEN

Eric K. Layland, MS¹, Marco Hidalgo, PhD², Katrina Kubicek, PhD³, Michele Kipke, PhD⁴¹Pennsylvania State University, University Park, PA; ²University of Southern California; ³Southern California Clinical and Translational Science Institute; ⁴Children's Hospital Los Angeles

Background: Sexual minority men of color not only experience stigma targeting their sexual orientation and their race/ethnicity, but also unique stigma that specifically targets the intersection of these identities. Sexual racism is the rejection or objectification of sexual minority men of color by potential romantic and sexual partners. Like other stigma, sexual racism is associated with elevated incidence of adverse mental health consequences. Mindfulness moderates the effects of stress among African Americans but is predominantly unexplored among young men who have sex with men (YMSM). We examined the potential moderating role of trait mindfulness on the association between perceived sexual racism and psychological symptoms among diverse YMSM.

Methods: A community sample of 448 Black, Latino, and Black/Latino YMSM (mean age=22.3 years) reported past week psychological symptoms (somatization, depression, anxiety), past year suicide ideation, ideation with a plan, and attempts, and past three months non-suicidal self-injury (NSSI). Participants also reported frequency of sexual racism and trait mindfulness. We used logistic regression to examine the association between sexual racism and odds of psychological symptoms, suicidality, and NSSI. We then investigated mindfulness as a moderator of this association.

Results: Latino YMSM experienced sexual racism less often than Black and Black/Latino YMSM. Sexual racism was associated with higher odds of psychological symptoms (OR: 1.76-1.91), suicidal ideation with a plan in the past year (OR: 1.92), and NSSI (OR: 1.77). Main effects suggested the protective potential of mindfulness, however, mindfulness only moderated the effects of sexual racism on suicidal ideation with a plan (OR: 1.77) and NSSI (OR: 1.89), with marginal buffering effects on depression (OR: 1.34).

Conclusions: By framing this study at the intersection of sexual orientation and race/ethnicity stigma, we identify a unique social determinant of health among Black and Latino YMSM. Findings add to limited research on sexual racism underscore the potential utility in exploring its impact on mental health among Black and Latino YMSM. We offer promising evidence of the potential benefit of mindfulness as a buffer against the effects of sexual racism on depression, suicide ideation with a plan, and NSSI. Future interventions among Black and Latino YMSM may be improved by considering the unique impact of sexual racism and by integrating mindfulness components.

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ADAPTING AN EVIDENCE-BASED RESILIENCY-INTERVENTION TO THE NEEDS OF DIVERSE PATIENT POPULATIONS

Elyse R. Park, Ph.D., MPH¹, Daniel L. Hall, Ph.D.², Giselle K. Perez, PhD², Brittain Mahaffey, Ph.D.³, William N. Elwood, Ph.D.⁴¹Massachusetts General Hospital, Boston, MA; ²Massachusetts General Hospital/Harvard Medical School, Boston, MA; ³Stony Brook University School of Medicine, Stony Brook, NY; ⁴National Institutes of Health, BETHESDA, MD

Based on decades of clinical work and evaluation research, we created an evidence-based mind-body group intervention for resiliency. Conceptualizing resiliency as an individual's ability to adaptively cope with chronic, ongoing stress, our research mission is to increase resiliency among coping with chronic illness and disorders. Pairing physiological science, meditation science, theoretical models of CBT, and positive psychology, we developed an 8-session multicomponent group intervention: the Relaxation Response Resilience Program (3RP). Core intervention constructs, and corresponding core measures, were established. The treatment model has been shown to be efficacious for patients with varied chronic health conditions. We are broadening the reach of this intervention to vulnerable populations, including pregnant women experiencing elevated prenatal maternal stress, subgroups of cancer survivors, and parents of children with developmental disabilities. To target the illness experience vulnerabilities of these populations, we conducted evidence-based pilot trials to adapt the 3RP. Specifically, we conducted mixed methods studies to adapt the 1) context, 2) content, 3) delivery, and 4) assessment of the resiliency intervention.

Dr. Perez will discuss results from a mixed methods pilot one arm trial, which integrated oncology clinician and patient feedback to adapt and deliver, via telehealth, the 3RP for lymphoma patients transitioning off active treatment.

Dr. Mahaffey will discuss data from a mixed methods study aimed at assessing barriers to engaging with mental healthcare during pregnancy. She will also detail how these data are being used to adapt both the content and delivery of 3RP for this population.

Dr. Hall will discuss a proof-of-concept, mixed methods feasibility trial of the 3RP adapted to address fear of cancer recurrence among cancer survivors. He will describe adaptations to the intervention content and procedures, synthesize qualitative feedback from trial participants, and highlight trends in key patient-reported outcomes.

Dr. Park will present results from a pilot national trial of parents of children with developmental disabilities (i.e., ADHD, autism, dyslexia). This is an exploratory study in which she partnered with national organizations to elicit input from advocates, professionals, and parents to adapt and deliver the 3RP virtually to target caregiver and family stress.

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ADAPTING A MIND-BODY RESILIENCY TREATMENT TO PARENTS WITH CHILDREN WITH LEARNING AND ATTENTIONAL DISABILITIES

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Background: One in five children have a learning or attentional disability (LAD). Parents of children with LAD are vulnerable to high levels of distress. We conducted a mixed methods study to 1) identify sources and impacts of parental stress and resources available and 2) adapt and assess the efficacy of virtual delivery of a mind-body resiliency group program, the Relaxation Response Resiliency Program (3RP), for parents of children with LAD.

Methods: We conducted a 2-phase exploratory mixed methods study, including qualitative interviews and a randomized waitlist control pilot. In Phase 1, qualitative interviews were conducted with 5 clinicians, 2 groups with advocacy organizations, and 4 parent groups (N=25). Content analyses were conducted using NVivo 11 (reliability of kappa = 0.93). In Phase 2, 53 parents nationally were randomized, and surveys were administered at baseline (T1 intervention group; T1 and T2 3 months apart for control group) and post-treatment. Efficacy outcomes included distress (analog scale; primary), resiliency (CES), stress coping (MOCS-A), mood (PHQ-4), and social support (MOS-SSS).

Results: Qualitative interview findings confirmed high levels of parental stress and lack of psychosocial programs. Primary sources of stress were advocating for their child's needs and communication. Identified intervention targets were 1) emotional and physical exhaustion, 2) strained relationships, and 3) social isolation. 3RP treatment adaptations were made to the structure (creating a group intake) and intervention content (targeting? social support needs based on child's developmental stages; highlighting acceptance to normalize loneliness and child's challenges; focusing on positive reappraisal of child; enhancing communication. Interactive session exercise examples were modified to reflect shared stressors, such as LAD children being excluded socially. Fifty-six parents (mean age=46.8; sd=5.7; 89% female, 88% percent white, non-Hispanic) participated in the pilot trial. T1-T2 comparisons found that intervention vs control participants showed significant improvements in distress [VAS], $\Delta M = -1.95$; $d=.83$, resilience, $\Delta M = 6.38$; $d=.83$, stress coping $\Delta M = 8.69$; $d=1.39$; mood, $\Delta M = -1.79$; $d=.71$; and social support, $\Delta M = 5.47$; $d=.71$.

Conclusions: Parents caring for children with LAD experience high levels of stress, particularly affecting relationships and communication; however, parents report few support strategies. Our adapted intervention showed promising efficacy in delivering a virtually-delivered resiliency treatment that improved parents' overall levels of distress, stress coping, and resiliency, and support.

2

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A MULTIMODAL, MIND-BODY INTERVENTION FOR FEAR OF RECURRENCE AMONG CANCER SURVIVORS: ADAPTATION, FEASIBILITY, AND PATTERNS OF CHANGE

Daniel L. Hall, Ph.D.¹, Elyse R. Park, Ph.D., MPH², Gloria Yeh, MD, MPH³

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Background: Our recent meta-analysis suggests that a cohesive intervention integrating multiple mind-body techniques may be helpful for reducing fear of recurrence (FOR) in cancer. Thus, this study aimed to (1) adapt an evidence-based, multimodal, mind-body intervention (Relaxation Response Resiliency Program; 3RP) to target FOR and (2) test its preliminary feasibility and acceptability, (2) explore patterns of pre-post intervention change among key FOR and coping variables.

Methods: We convened three panels of experts (the parent 3RP, cancer survivorship, and clinical oncology) to provide tiered feedback to guide adaptations. The intervention comprised eight 90-minute group sessions and included skills in the relaxation response, cognitive restructuring, health behavior change, and positive psychology. Early stage survivors 3-30 months post primary treatment were recruited an academic hospital in Boston. Feasibility was assessed by recruitment/enrollment rate, session attendance, and adherence to follow-up assessments. Acceptability was assessed by Likert scales (enjoyableness, convenience, helpfulness, and relevance). Validated self-report measures assessed FOR and resiliency-related outcomes at baseline, post-intervention, 1- and 3-months post-intervention. Cohen's d scores were computed from baseline to post-intervention, and repeated-measures ANOVAs assessed longitudinal patterns across all four timepoints.

Results: Of 68 cancer survivors screened, 40 were eligible. Enrolled participants (N=23, response rate 58%) included survivors of seven common cancer types (time since treatment $M=12$ months). Attendance was high ($M=6.1$ sessions) and 93% completed all follow-up surveys. Participants reported robust increases in independent relaxation practice. Most sessions (87%) had "High" or "Very High" acceptability. Exit interviews revealed cognitive, behavioral, emotional, and existential benefits. Medium to large, significant improvements were observed in key FOR and resiliency self-report measures from baseline through 3-month follow-up.

Conclusions: The adapted 3RP intervention was acceptable, feasible, and associated with favorable improvements in FOR and resiliency. Testing in a randomized trial is warranted.

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HOW CAN WE HELP THE LYMPHOMA SURVIVOR MANAGE THE CHALLENGES OF EARLY POSTTREATMENT SURVIVORSHIP?: THE ART OF BALANCING PROGRAM ADAPTATION WHILE MAINTAINING PROGRAM INTEGRITY

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Background: Although treatment advances have led to improved survival, compared to other survivors, lymphoma patients experience significant physical and emotional challenges posttreatment. This trade-off between survival and quality of life leaves lymphoma survivors feeling unprepared and distressed as they strive to adjust to a new “normal.” Despite these concerns, there are no known interventions that help lymphoma survivors adjust to the posttreatment re-entry period. This presentation will describe our process of adapting an evidence-based mind-body resiliency program (Relaxation Response Resiliency Program; 3RP) for lymphoma survivors transitioning into posttreatment survivorship.

Methods: We used a 3-phase, mixed methods, single-arm pilot feasibility trial to test a virtual, 8-week mind-body group program for lymphoma survivors (0-2yrs posttreatment). In-depth individual interviews with 11 survivors and clinical group interviews with the lymphoma treatment team generated information about program content, outcomes of interest, and in-session activity adaptations to target the 3RP for lymphoma. 30 patients enrolled in the single-arm pilot; emotional distress, fatigue, and coping outcomes were completed at baseline, post-3RP, and 1-month follow-up. A random subset of patients completed exit interviews about their experience.

Results: We adapted each of the 3RP's core coping skills (relaxation response [RR] elicitation, stress awareness, and adaptive strategies) based on identified patient needs and challenges with a focus on maintaining the integrity of the core program. The 3RP-lymphoma emphasized the practice of concrete RR skills that facilitated the *breaking away* from ruminative thoughts and that replaced negative body associations through warming sensations. Stress awareness highlighted worry thoughts and fatigue as a stress trigger and signal, and strategies helped survivors *return to normalcy* by re-introducing activities through pacing. Adaptive strategies focused on generating perspectives of empowerment, self/other empathy, and self-compassion to manage fears of uncertainty and regain social connection. Improvements in anxiety, tolerance of uncertainty, and coping were noted post-treatment.

Conclusion: This study is among the first to address a critical time of transition for this survivor population. Findings underscore our ability to effectively adapt a mind-body resiliency program tailored to the needs of early posttreatment lymphoma survivors.

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ADAPTING A MULTIMODAL MIND-BODY RESILIENCY PROGRAM FOR PRENATAL MATERNAL STRESS

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Background: Prenatal Maternal Stress (PNMS) is defined as the combination of stressful life-events, elevated general stress, pregnancy-specific stress, and symptoms of depression and anxiety. It is a risk factor for preterm delivery and low birthweight, as well as postpartum maternal mental health problems. Despite this, PNMS often remains untreated due to stigma and logistical barriers accessing care. There is evidence that cognitive behavior therapy (CBT) and mind-body therapies are feasible, and low-risk treatments for perinatal mental health conditions. Much of the work in this area, however, has focused on intervening after pregnancy, or single modality programs (e.g., yoga) that demonstrate only short-term benefits and do not address the complex psychosocial factors underlying PNMS. In this talk, we will describe using a mixed methods approach to identify treatment needs of a sample of women with elevated PNMS and explain how this data is being used to create a tailored, web-based mind-body intervention.

Methods: A three-phase mixed methods design was used to adapt the Relaxation Response Resiliency (3RP) group treatment for this population. This included conducting focus groups, obtaining survey data, and soliciting expert feedback. A sample of pregnant and postpartum (< 6 months) women were recruited from local obstetrical clinics and online parenting groups. Twenty-six women reporting elevated PNMS during their most recent pregnancy (n = 16 pregnant, n = 10 postpartum) were enrolled in one of six focus groups. Interviews were coded by two independent raters using the sort and sift, think and shift approach. This data was combined with survey data to develop the SMART-Pregnancy manual and protocol.

Results: Focus groups were conducted from 02/2019-08/2019. Participants were primarily Caucasian (50%), Latina (27%), or Black (12%). Approximately half (46%) were nulliparous, with a mean age of 31.23 years. Identified themes related to pregnancy-specific stress included: health concerns, discrimination, trouble with interpersonal communication, and challenges accessing resources. Reported barriers to treatment engagement included: logistical barriers (e.g., lack of transportation), lack of knowledge about mental health, and feeling physically ill. Treatment preferences included: a desire for a group format and for additional postpartum support.

Conclusions: The results of this study are consistent with the literature suggesting the importance of social support during pregnancy and the need for continued postpartum support. They also underscore the need for flexible and innovative treatment approaches. As such, example modifications include: adding training on interpersonal communication, adding 2 postpartum group check-ins, and making supplemental, self-guided materials available online. Additional program and protocol modifications will be discussed.

Thursday April 2nd, 2020 3:30 PM-4:45 PM

Paper Session 9

3:30 PM-3:45 PM

PHYSICAL ACTIVITY MONITOR WEAR-TIME AMONG LOW-INCOME MINORITY WOMEN IN A RANDOMIZED CLINICAL TRIAL

Sharmilee Nyenhuis, MD¹, Guilherme M. Balbim, MS², Devin Dixit, n/a¹, Spyros Kitsiou, PhD², Lisa K. Sharp, PhD²

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Background: Fitbit activity trackers are often considered to be user-friendly, reliable, and feasible in a variety of research studies. Adherence to Fitbit activity trackers has been variable but has not been extensively studied in low-income, minority populations. We aimed to examine adherence to the Fitbit Charge HR in participants of a multi-component physical activity (PA) intervention designed for low-income African American (AA) women with asthma.

Methods: AA women, age 18-70 with uncontrolled asthma were recruited from an urban minority-serving academic health system to participate in a 24-week PA intervention. Women were randomized to the control (CG) or intervention (IG) group. The CG received quarterly asthma newsletters, a Fitbit Charge HR, and attended one educational session on exercising safely with asthma and Fitbit setup/operation. The IG received a multi-component PA education session, a Fitbit Charge HR, individualized step goals, motivational and Fitbit-related text messages, and monthly in-person group meetings. Adherence was defined as daily Fitbit wear time calculated by subtracting the total number of “non-wear time” from the total number of minutes per day, with non-wear time defined as any interval with at least 60 consecutive seconds of non-recorded heart rate data from the Fitbit device. A secure web-based research platform (iCardia) was used to obtain all Fitbit data in real-time (wear time, physical activity, sedentary time) and send text-messages to participants. Fitbit lapses were defined as no wear time for ³4 consecutive weeks. Mann Whitney test was used to assess differences in median daily wear time between groups at $p < 0.05$ significance level.

Results: Fifty-three women enrolled in the study (NCG = 28; NIG = 25). Fitbit wear time was 601 minutes/day (Q1-Q3 = 490-720 min/day) in CG versus 1000 minutes/day (Q1-Q3 = 918-1040 min/day; $p < 0.001$) in IG. Lapses in Fitbit use over 24-weeks occurred in 71% (n=20) of CG vs. 24% (n=6) of IG.

Conclusion: CG participants' adherence to Fitbit use was lower than IG participants. Providing a Fitbit and instructions for use is not enough to ensure Fitbit adherence in minority populations. Additional components such as text message reminders to sync, charge and wear the Fitbit, monthly group sessions and individualized step goals may be needed to enhance the adherence to Fitbit, especially in low-income, minority populations.

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Paper Session 9

3:45 PM-4:00 PM

DEVELOPMENT OF THE FIT2THRIVE PHYSICAL ACTIVITY PROMOTION SMARTPHONE APP WITH A NATIONWIDE SAMPLE OF BREAST CANCER SURVIVORS

Jennifer H. La, Bachelor of Science in Health Systems Management¹, Whitney A. Welch, PhD¹, Kara L. Gavin, PhD², Payton E. Solk, BA¹, Marilyn Lu, BA¹, Frank Penedo, PhD³, Bonnie Spring, PhD⁴, Ronald T. Ackermann, MD MPH⁵, Juned Siddique, DrPH¹, Kerry S. Courneya, PhD⁶, Siobhan M. Phillips, PhD, MPH¹

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Purpose: Increased moderate and vigorous physical activity (MVPA) is associated with better health outcomes in breast cancer survivors (BCS). Yet, the majority of BCS are insufficiently active. Mobile health MVPA promotion interventions using smartphone applications (apps) may be a scalable strategy to increase MVPA among BCS, but few evidence-based apps exist. The purpose of this study is to describe the development of the Fit2Thrive app, a MVPA promotion app for BCS.

Methods: A user-centered, iterative design process was conducted over 18 months. Preferred app features were identified from a nationwide sample of stage I-III BCS (n=96, $M_{age}=55.8$) via an online survey and semi-structured interviews. Based on results, an app prototype was developed. A randomly selected subsample of BCS (n=22) interacted with the app for ≥ 3 days and completed the Post-Study System Usability Questionnaire at the end of the test period to rate usability characteristics (functionality, aesthetics and engagement). Additionally, a random subsample of BCS (n=15) indicated whether they liked, disliked, or felt neutral toward potential app notification messages. Data were analyzed using descriptive statistics.

Results: Fit2Thrive app prototypes were rated highly for efficiency ($M=6.1$, $SD=1.3$), comfort of use ($M=5.4$, $SD=0.66$), organization of information ($M=5.2$, $SD=1.3$), pleasantness of interface interaction ($M=5.3$, $SD=1.4$), overall satisfaction with ease of use ($M=5.2$, $SD=0.9$), and moderately for ease of learning the app ($M=4.9$, $SD=1.3$), finding information ($M=3.8$, $SD=1.4$), and clarity of information ($M=3.7$, $SD=1.2$). The majority of BCS (60%) indicated the app worked overall/had negligible problems, was easy to learn/immediately intuitive to use (62%), had pleasant/beautiful visual appeal (70%), moderate/highly relevant information quality (89%), and okay or better information quantity (88%). A more moderate proportion indicated content was designed for the target audience with minor/no issues (57.8%) and navigation was understandable (57.1%); 82% rated app engagement as mostly boring/only briefly entertaining. Almost half (47.6%) indicated they would use the app >50 times in next 12 months. BCS indicated positive response for 80% of self-monitoring, 100% of MVPA entry reminder, 78% of motivational, and 85% of goal attainment app notification messages.

Conclusions: BCS rated Fit2Thrive app functionality, aesthetics, and message content moderately to positively but noted engagement needed improvement. These formative data were used to inform the final version of the Fit2Thrive app to be tested in a factorial trial using the Multiphase Optimization Strategy framework.

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Paper Session 9

4:00 PM-4:15 PM

PILOT STUDY EXAMINING THE EFFICACY OF HOME-BASED HIGH INTENSITY INTERVAL TRAINING (HIIT) ON PHYSICAL ACTIVITY ADHERENCE

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Only 19% of women and 26% of men meet the USDHHS physical activity (PA) recommendations despite the numerous health benefits associated with PA. A majority of adults report lack of time as a barrier to physical activity adherence. High intensity interval training (HIIT), which consists of short bursts of high-intensity PA followed by recovery or light PA, potentially addresses this time barrier since it takes less time than traditional moderate intensity activity. Additionally, preliminary research indicates that HIIT may be more enjoyable than continuous moderate activity. The purpose of this pilot study was to examine the feasibility and preliminary efficacy of a home-based HIIT intervention on PA adherence among low active adults. Affective response to exercise was also examined. Participants (n=47) were randomly assigned to a home-based HIIT intervention or wait-list control lasting 12 weeks. Participants in the HIIT intervention received eight telephone calls designed to increase PA adherence by utilizing strategies based on Self-Determination Theory. Participants were instructed to complete three HIIT sessions and one moderate intensity session per week to compare the affective responses to HIIT vs. moderate intensity activity. Participants received access to a website that included the home-based session instructions and videos demonstrating proper form. Both aerobic and resistance training exercises were prescribed. The wait-list condition received the intervention upon completion of the 12 weeks. Participants in the HIIT intervention increased their vigorous intensity PA from 3.9 minutes per week at baseline to 40.0 minutes at six weeks and 61.8 minutes at 12 weeks, which met the study's vigorous intensity goal of 60 minutes of HIIT per week. The control increased their vigorous activity from 14.2 minutes at baseline to 16.3 minutes at six weeks and 34.6 at 12 weeks. There were significant differences at six weeks, $f(1,44)=5.15$, $p < .05$ but not 12 weeks. Based on a within subjects analysis of the feeling scale among the participants in the HIIT intervention, participants rated the HIIT sessions as more enjoyable than the moderate intensity sessions, $f(1,21)=3.27$, $p=.085$. The retention rate was 100% for both groups at 6 and 12 weeks. This study provides evidence for feasibility and possible efficacy of a home-based HIIT intervention; however, additional studies are needed with larger samples sizes to confirm efficacy of home-based HIIT interventions.

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Paper Session 9

4:15 PM-4:30 PM

WALKIT ARIZONA: IMPACT OF MHEALTH INTERVENTIONS ON WALKING FOR LEISURE VERSUS TRANSPORTATION

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Background: WalkIT Arizona is a 2x2 factorial trial testing goal type and reward timing to enhance adoption and maintenance of accelerometer-measured walking and moderate-to-vigorous physical activity (MVPA) among insufficiently active adults. Self-reported PA augmented objective data and can detect domain-specific changes in activities, such as walking for leisure or transportation.

Purpose: To examine effects of goal setting (static vs. adaptive) and financial reinforcement timing (delayed vs. immediate) on self-reported walking midway through a 12-month intervention.

Methods: Healthy, insufficiently active adults (N=512, 65% female, ages 18-60) were enrolled in the mHealth intervention and completed the International Physical Activity Questionnaire (IPAQ) long form at baseline (BL) and six months. Static goals prescribed 30 MVPA min/day; adaptive goals adjusted up, down, or stayed the same daily. Delayed incentives escalated in value and were delivered every 60 days; immediate incentives awarded points for meeting daily PA goals, which were redeemed for e-gift cards. Intervention effects were estimated using negative binomial hurdle models, each comprised of two submodels: any walking (vs. none), estimated with logistic regression, and non-zero values, estimated with a negative binomial regression. Intervention effects on walking for transportation and leisure at six months, adjusting for BL activity, were examined separately.

Results: Overall, participants reported increased walking at six months for both transportation (+38.7 min/wk, $Z = -7.32$, $p < .001$) and leisure (+47.0 min/wk, $Z = -7.93$, $p < .001$). For transportation, there were no significant effects of goal type or reward timing for either the hurdle (any vs. zero) or count model. Among participants who reported transportation walking at six months, mean time was 102.2 min/wk. Goal type and reward timing had significant and independent effects on leisure walking. Negative binomial regression estimates showed the adaptive goal group reported 20.6% fewer min/wk compared to the static goal group ($p=.02$), and the immediate reward group reported 34.4% more min/wk compared to the delayed reward group ($p < .01$). Among those reporting any leisure walking at six months, mean time was 109.8 min/wk.

Conclusion: Reported walking time increased for both transportation and leisure at six months, although effects of goal type and reward timing were significant only for leisure walking.

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Paper Session 9

4:30 PM-4:45 PM

MAPTREK RESIDENTIAL: A MULTILEVEL MHEALTH INTERVENTION FOR INCREASING PHYSICAL ACTIVITY AMONG OLDER ADULTS

Katie Hosteng, MS¹, Lucas Carr, Ph.D.²¹University of Iowa, IOWA CITY, IA; ²University of Iowa, Iowa City, IA

Background: Older adults (>65 years) are the largest growing population in the U.S., projected to reach 78.0 million by 2035. The number of older adults living in long-term care facilities (e.g., retirement communities, nursing homes) will likely double from 13 million in 2000, to 27 million by 2050. Older adults have the highest prevalence of physical inactivity placing them at increased risk for a number of chronic diseases and mortality. Past interventions have been primarily focused on the individual level. Multilevel interventions are more effective but few examples exist.

Objective: To determine the efficacy and acceptability of a multilevel mHealth intervention (MapTrek Residential) for increasing physical activity of older adults living in a retirement community.

Methods: We recruited 54 retirement community-dwelling older adults (81.2 years, 77.8% Female, 98.1% White) and 14 staff members (45.1 years, 92.9% Female, 100% White) to participate in an 8-week intervention. MapTrek Residential is a multilevel mobile health platform that engages users to participate in a series of team based virtual walking challenges. Participant's physical activity is monitored daily with a Fitbit Zip which automatically syncs with public monitors located within the retirement community. The monitors display team results and daily educational/motivational messages. Psychosocial outcomes (self-efficacy for exercise, social support, outcome expectations, social isolation) were measured at pre- and post-intervention. Descriptive statistics and linear mixed models were used to determine the intervention effects.

Results: Participant adherence was high with participants wearing the Fitbit 93.4% of all intervention days. Participants walked an average of 5005 steps/day at baseline (95% CI, 4189-5821) which increased significantly to 6111 steps/day by Week 8 (95% CI, 5265-6956). No significant changes were observed for outcome expectations, social support, or social isolation. Self-efficacy for exercise significantly declined from baseline to post-intervention ($p = 0.01$).

Conclusions: These findings suggest the multilevel mHealth physical activity intervention was effective for increasing physical activity (+22.1%) among a sample of older adults over eight weeks. Further research is needed to refine and test the intervention among older adults residing in retirement communities that lack access to physical activity resources.

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CITATION AWARD WINNER

Paper Session 10

3:30 PM-3:45 PM

THE ACCEPTABILITY AND EFFICACY OF SHARING DIGITAL SELF-MONITORING DATA WITH WEIGHT LOSS COACHES TO ENHANCE ADHERENCE

Meghan L. Butryn, PhD¹, Kathryn Godfrey, PhD¹, Mary K. Martinelli, MA¹, Fengqing Zhang, PhD¹, Evan M. Forman, PhD¹¹Drexel University, Philadelphia, PA

Introduction: Maintaining motivation for long-term weight loss is challenging. A strong sense of supportive accountability may help promote adherence to weight control behaviors. This study tested the acceptability and preliminary efficacy of enhancing supportive accountability by giving weight loss coaches access to participant data collected by digital self-monitoring (SM) devices.

Methods: In Phase I, participants ($n = 77$) received group-based treatment to induce weight loss (months 1-3), then were randomized to a Phase II condition for weight loss maintenance (months 4-12). In Phase II, all participants received weekly text messages and monthly phone calls from their Phase I coach (no in-person contact), and were told to use a wireless body weight scale, digital food log, and activity sensor daily. In LM+SHARE, coaches regularly viewed the weight, eating, and moderate-to-vigorous physical activity (MVPA) data from these devices and gave data-driven feedback in their text messages and phone calls. In the LM condition, coaches had no access to SM data. Outcomes included change from 3-12 months in weight (measured in the research clinic,) MVPA (using research-grade accelerometers) and SM engagement (objectively assessed with device data). Imputation was used for missing weight and MVPA data.

Results: Acceptability and feasibility of LM+SHARE was high, as demonstrated by high satisfaction with treatment (M item rating = 5.5 out of 7), high rates of completion of phone calls (89.7%) and text messages (93.9%), and 12-month retention (97.4%). During Phase II, participants in LM+SHARE, compared to LM, engaged in more frequent SM of weight (58% vs. 43% of days, $p = 0.02$) and SM of eating (67% vs. 41% of days, $p < .001$). SM of PA was high in both conditions and did not differ (80% vs. 79% of days, $p = 0.85$). The decline in MVPA during Phase II was less in LM+SHARE vs. LM, at a marginally significant level ($p = 0.05$); at 12 months, PA was 108.1 min/week in LM+SHARE vs. 84.6 min/week in LM. Weight change during Phase II did not significantly differ by condition ($p = 0.23$); at 12 months, weight loss was 7.1% in LM+SHARE vs. 6.1% in LM.

Conclusion: The results suggest that when coaches monitor and react to digital SM data during remote weight loss maintenance treatment, it increases the likelihood of participants engaging in SM of weight and eating and facilitates maintenance of MVPA. With longer use and additional intervention enhancement, there is the potential for this to improve outcomes.

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Paper Session 10

3:45 PM-4:00 PM

PRIMARY OUTCOMES OF THE EXPERIENCE SUCCESS TRIAL: VIRTUAL REALITY SKILLS TRAINING TO ENHANCE AN ONLINE WEIGHT LOSS PROGRAM

Graham Thomas, Ph.D.¹, Carly M. Goldstein, PhD², Dale Bond, Ph.D.¹, Peter W. Tuerk, PhD³¹Brown Medical School, Providence, RI; ²The Miriam Hospital/Alpert Medical School of Brown University, Providence, RI; ³University of Virginia, Charlottesville, VA

Online delivery of behavioral obesity treatment improves access to care while alleviating other important barriers such as cost and the need for frequent clinic visits. However, online programs lack opportunities for experiential learning and molding of behavioral weight management skills common to in-person treatment, which may be important for driving positive treatment outcomes. Web-based virtual reality (VR) holds potential for filling this gap while preserving scalability and cost. Thus, this study tested whether addition of an interactive VR component to the widely available Weight Watchers commercial online platform improved short-term weight loss.

Participants (N=146; 83.7% women, mean±SD BMI 33.1±4.9 kg/m-squared) were randomized to 6-months of no-cost access to the Weight Watchers online platform alone (WWO), or WWO enhanced with the Experience Success (ES) program. The ES program provided four 15-minute Web-based VR training sessions designed to improve behavioral weight loss skills applicable to the home environment, the workplace, physical activity, and social situations (i.e., a party at a friend's house). The scenarios were released at 2-week intervals and included dozens of choice points that guided how the scenarios played out. Objective weight was measured at baseline, 3 and 6-months. Primary outcomes analysis focused on weight loss employed the intent-to-treat principle and linear mixed effects models with maximum likelihood estimation. The Weight Control Strategies Scale (WCSS; range 0-120) was used to measure the frequency with which study completers used 30 empirically validated weight management skills in the previous 4 weeks.

Retention was 70% at 3-months and 62% at 6-months. Mean±SE weight loss did not differ between WWO and WWO+ES at 3-months (2.1±0.7 kg vs. 3.8±0.7 kg, respectively; p=.086) but WWO+ES had greater weight loss at 6-months (2.3±0.7 kg vs. 4.4±0.7kg, respectively; p=.042). WWO and WWO+ES did not differ on mean±SD WCSS at 3-months (64.5±17.3 vs. 68.0±17.5, respectively; p=.336) or 6-months (58.9±18.5 vs. 61.6±16.7, respectively; p=.686).

WWO+ES achieved nearly double the weight loss compared to WWO alone at 6-months. These results demonstrate the potential of Web-based VR skills training to enhance outcomes of commercial online weight management programs that are widely accessible, often at low cost. Lack of difference between these groups on use of weight control strategies warrants additional testing of mechanisms.

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Paper Session 10

4:00 PM-4:15 PM

WHAT LEVEL OF PERSONALIZATION MATTERS IN DIGITAL WEIGHT LOSS TREATMENT FOR YOUNG ADULTS?

Melissa A. Napolitano, PhD¹, Meghan Mavredes, MPH¹, Jessica A. Whiteley, PhD², Ashley H. Tjaden, MPH³, Samuel J. Simmens, Ph.D.⁴, Loretta DiPietro, PhD, MPH¹, Laura L. Hayman, PhD, MSN, FAAN,FAHA,FPCNA⁵, Jamie M. Faro, PhD⁶, Ginger Winston, MD, MPH⁷¹The George Washington University, Washington, DC; ²UMass Boston, Boston, MA; ³The George Washington University, Rockville, MD; ⁴George Washington University, Washington, DC; ⁵UMass Boston, 100 Morrissey Blvd. Boston, MA 02125-3393, Boston, MA; ⁶University of Massachusetts Medical School, Worcester, MA; ⁷George Washington University, Medical Faculty Associates, Washington, DC

Introduction: Young adults with overweight and obesity are a population in need of innovative delivery channels for intervention. Little is known about the level of personalization necessary for successful weight outcomes.

Methods: Young adults with overweight/obesity (n=459; 78.6% female, mean±SD: age 23.3 ± 4.4 years, weight: 86.6 ± 15.6 kg, body mass index [BMI] 31.2 ± 4.4 kg/m²) recruited from two sites, were randomly assigned to receive one of three digitally delivered 18-month interventions. Two were based on the Diabetes Prevention Program and focused on weight loss with either personalized (Tailored; n=150) or generic (Targeted; n=152) messages and feedback while the third (Contact Control; n=157) provided general healthy body content (e.g., body image, hydration). Objectively measured weight outcomes were assessed at 6, 12, and 18 months. Analysis of covariance tested weight differences adjusting for study site, sex, age, baseline weight, and height.

Results: Six month follow-up weights were available for 77.1% (n=354) of randomized participants. For each group, weight changes from baseline were Tailored: -1.0 ± 4.1kg; Targeted: -0.5 ± 4.3kg, and Control: -0.3 ± 4.7kg, p=0.5 and percent weight changes were Tailored: -1.2 ± 4.6%; Targeted: -0.6 ± 5.2%, and Control: -0.1 ± 4.7 %, p=0.19. There was no overall effect of study group on 6 month weight losses (p=0.50); however, the pre-planned baseline weight x study group interaction test was statistically significant (p < 0.001). Plots and the Johnson-Neyman technique indicated a significantly greater weight loss in the Tailored and Targeted groups compared to the Control group for participants with a lower baseline weight. For example, among the lowest tertile for baseline weight (n=152), the Tailored group lost 2.1kg [-3.3, -0.6] more than the Control group and the Targeted lost 1.9kg [-3.5, -0.7] more than the Control group after adjustment for covariates.

Conclusion: Digital interventions hold promise for delivering weight loss treatments to young adults, particularly for those who begin treatment at a lower body weight. More intensive interventions (e.g., in-person, telephone, or combination) may be needed for young adults who already have obesity. Future research and practice implications will be discussed including recommendations of providing a stepped care approach to meet the needs of those with range of initial body weights.

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Paper Session 10

4:15 PM-4:30 PM

BOT VS HUMAN: COMPARING ENGAGEMENT WITH AUTOMATED VS. HUMAN-GENERATED TWEETS FROM WEIGHT MANAGEMENT APPS

Jared M. Goetz, BA¹, Greg J. Champion, M.A.², Aviana O. Rosen, n/a³, Kelsey M. Arroyo, B.S.⁴, Molly E. Waring, PhD⁵, Sherry Pagoto, PhD⁵¹University of Connecticut, Dudley, MA; ²University of Rhode Island, West Hartford, CT; ³University of Connecticut, West Hartford, CT; ⁴University of Connecticut, Vernon, CT; ⁵University of Connecticut, Storrs, CT

Health apps often include social features to help users garner social support from other users in their online social networks. Two popular weight loss apps, MyFitnessPal and Lose It, include an automated feature that allows users to tweet progress updates (e.g., weigh-ins) to their followers. The tweets include the app's hashtag which allow users to connect and engage with each other on Twitter. We examined the proportion of tweets using the hashtags #myfitnesspal and #loseit that are automated versus organic (i.e., written by the user), and compared them on engagement. From July 9-16, 2019, we used NCapture to collect English-language tweets that included the hashtags #myfitnesspal or #loseit. Tweets were characterized as either automated or organic and then categorized by type (e.g., weigh-in, exercise report). Organic tweets included only the subset of non-automated tweets likely made by actual app users and not those from accounts that were advertising, using #loseit unrelated to the app or weight, or health influencers, professionals, or organizations not sharing their personal experience using the app. Engagement (likes, comments, retweets) from all organic tweets by app users (n=254) and an equal number of randomly-selected automated tweets (n=254) was recorded and compared using chi-square tests. A total of 18,472 #myfitnesspal and 7,101 #loseit tweets were collected over the 7-day sampling period. The vast majority of tweets (98%) were automated (#myfitnesspal: 99%; #loseit: 96%). Organic tweets were more likely to receive any engagement than automated tweets (39.4% vs 4.4%; $p < 0.001$). No automated tweets received retweets; 0.4% had 1 reply, 3.2% had 1 like, and 0.8% had 2-5 likes. Engagement with organic tweets was also low: replies (1 reply: 5.2%; 2-5 replies: 4.0%, >5 replies 1.2%), likes (1 like: 22.1%; 2-5 likes: 11.7%, >5 likes: 3.2%) and retweets (1 retweet: 5.2%; 2-5 retweets: 0.4%). The majority of tweets with app hashtags were automated and these received negligible engagement. Organic tweets also received very low engagement. That a search of these hashtags produces mostly automated tweets with no engagement could explain the lack of organic interactions. Automated posts to social media platforms may not be effective at soliciting social support or connecting users. Health apps might be improved by designing more effective means for users to elicit social support and engage their social connections in their behavior change efforts.

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MERITORIOUS AWARD WINNER

Paper Session 10

4:30 PM-4:45 PM

DO DIFFERENT REFERRAL METHODS INFLUENCE THE REACH, RETENTION, AND EFFECTIVENESS OF A DIGITALLY-DELIVERED WEIGHT LOSS PROGRAM?

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The purpose of this study was to examine the utility of different physician referral and engagement strategies for improving reach (i.e., number, proportion, and representativeness of participants), initial retention, and effectiveness of an evidence-based, digitally-delivered, 12-month weight loss program in a rural region. Five primary care physicians were randomly assigned to a sequence of 4 referral strategies: point of care (POC) referral with active telephone follow-up (ATF); POC referral, no ATF; population health registry-derived letter referral with ATF; and letter referral, no ATF. All patients who received a referral and expressed interest (either through ATF or directly contacting the research team) completed a telephone screening and, if eligible, attended a brief enrollment appointment with a member of the research team. All participants received a Bluetooth-enabled home scale. A total of 573 of a potential 991 referrals were made over 16 weeks and 98 patients, representative of the region, enrolled in the program (60% female; 94% Caucasian; 94% Non-Hispanic). Letter referrals reached a significantly higher proportion of patients than POC (100% vs 17%) and yielded more participants (12% vs 8%, $p < .05$). Patients receiving ATF were significantly more likely to be screened (47% vs 7%; $p < .05$) and enrolled (15% vs 7%, $p < .05$) when compared to those without ATF. Finally, when considering total number enrolled, POC with ATF (n=27), letter with ATF (n=30), and letter with no ATF (n=27) were comparable while POC with no ATF accrued the fewest participants (n=14). Over the first 16 weeks, 77 participants (79%) recorded an initial weight and 54 (55%) completed at least one additional weigh-in. On average, participants lost a significant amount of weight (3.8 ± 7.8 lbs; $p < .01$) and approximately 13% had lost $\geq 5\%$ of their initial body weight. Retention and weight change did not differ significantly by referral strategy. Population health management approaches provide a much higher proportion of patients an opportunity to engage in an evidence-based weight loss program and will not result in higher attrition or attenuate weight loss relative to POC strategies. Unexpectedly, from an overall yield perspective, ATF may be less necessary following a population health referral method—but doubled the number of participants accrued through point of care referrals. Future cost assessment across referral strategies relative to accrual rates is planned.

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CITATION AWARD WINNER

Paper Session 11

3:30 PM-3:45 PM

DETERMINING THE TIMING AND FREQUENCY OF FINANCIAL TOXICITY ASSESSMENTS IN ONCOLOGY PATIENTS

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Background: Rising costs and shifts in payment structures have drawn attention to the financial impact of cancer, giving yield to studies of financial toxicity (FT), the economic distress associated with care. There is emerging literature measuring FT, but there is, to our knowledge, no research describing the timing and frequency of FT assessment within the treatment trajectory. Understanding when patients and caregivers are most likely to be impacted by FT is essential for developing a methodology to study FT and determining the optimal timing of interventions.

Objective: To determine the timing and frequency of FT assessment in primary research studies.

Methods: We conducted a systematic literature search of quantitative studies of FT in cancer patients and their caregivers, following PRISMA guidelines. We included US and non-US studies published after 2009 and excluded articles that only measured out-of-pocket costs (without assessing their context or impact) or societal economic burden. We used descriptive statistics and bivariate testing to characterize current FT research.

Results: After screening 209 articles, we included 82 full-text articles: 67% (n=55) employed a cross-sectional assessment of FT; 33% (n=27) were longitudinal. 52% (n=43) of studies took place outside of the US, but study type did not vary by location ($p=.20$). Of cross-sectional studies, 56% (n=30) included at least one reference to assessment timing (mean/median time since treatment or diagnosis). Of longitudinal studies, the median number of assessments was 3 (range: 2-8). Median time of last assessment was 12.0 months (range: 1-60) from baseline. Of studies that included patients (n=60), 26% were of patients on active treatment, 27% in long-term follow-up, and 23% of both; 24% did not define a treatment phase. Covariates included measurements of employment status (72% of articles), socioeconomic status (65%), income (48%), work hours (37%), quality of life (33%), and sick leave/time (27%).

Conclusions: Over one-third of the studies in this review did not include information about the timing of FT assessment, many omitted important covariates, and most longitudinal studies followed patients for no longer than one year. As cancer treatment is associated with long-term and late effects that impact patients' and caregivers' ability to work, it is vital to promote longitudinal FT research that reports important details and follows patients well into the survivorship period.

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Paper Session 11

3:45 PM-4:00 PM

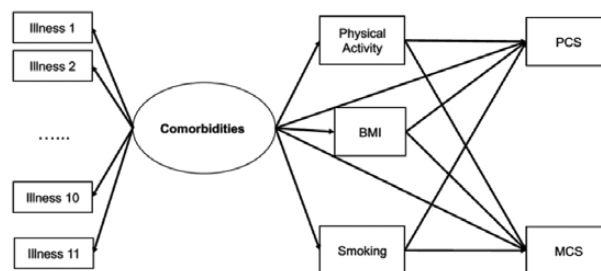
COMORBIDITIES, QUALITY OF LIFE AND HEALTH BEHAVIORS AMONG CANCER SURVIVORS: FINDINGS FROM MEPS

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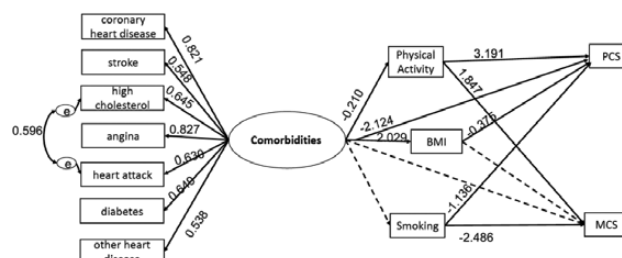
This study aimed to examine the effect of comorbidities on quality of life (QOL) and the mediation effects of health behaviors on the relationships between comorbidities and QOL among cancer survivors. Longitudinal data were from the 2011 to 2015 Medical Expenditure Panel Survey (N=793 adult cancer survivors who reported to have been diagnosed with at least one of the most common types of cancers in the US). Using the Structural Equation Modeling with weights that combines Confirmatory Factor Analysis (CFA) and multiple regression, we examined the latent structure of comorbidities measured by 11 observed illnesses and detected the potential direct effects of comorbidities on QOL and indirect effects of comorbidities on QOL through health behaviors (mediation). We evaluated the goodness of fit based on recommended statistics: CFI 0.95; TLI 0.95; and RMSEA (<0.10). Health behaviors focused on smoking, physical activity, and BMI (a proxy for healthy diet). QOL was measured using the SF-12 V2 that consists of the Mental Component Summary (MCS) and Physical Component Summary (PCS) to represent mental and physical well-being. The CFA revealed moderate to high (standardized) factor loadings for angina (0.827), coronary heart disease (0.821), hypertension (0.813), diabetes (0.649), high cholesterol (0.645), heart attack (0.630), stroke (0.548) and other heart disease (0.538) (all $p < .001$). CFA results indicated optimal model fit. The significant results of structural model included 1 direct effect of comorbidities on PCS (2.124; $p < .001$); 2 indirect effect of comorbidities on PCS through BMI (-0.76; $p < .001$); 3 indirect effect of comorbidities on PCS through physical activity (-0.67; $p = .012$); 4 indirect effect of comorbidities on MCS through physical activity (-0.39; $p < .001$); 5 total effect of comorbidities on PCS and MCS (-3.425; $p < .001$) (-0.39; $p < .001$), respectively; and 6 negative relationships between smoking and PCS (-2.486, $p < .001$) and MCS (-1.136, $p = .023$). The negative effects of comorbidities on PCS can be mitigated by enhancing physical activities and reducing BMI. Physical activity also mitigates the negative impact of comorbidities on MCS. Smoking cessation improves PCS and MCS but does not influence the effects of comorbidities on PCS or MCS. We used individual weights and information of strata and cluster to estimate covariance matrix in the complex survey design, and thus, improved the generalizability of our results.

Figure 1. Comorbidities, Quality of Life and Health Behaviors



Note:
Cancer included: breast, prostate, lung, colon, bladder, uterine corpus, melanoma, non-Hodgkin Lymphoma, thyroid, and kidney and renal pelvis
Illnesses included coronary heart disease, stroke, high cholesterol, angina, heart attack, diabetes, other heart disease, hypertension, chronic bronchitis, joint pain and arthritis

Figure 2. Results: Comorbidities, Quality of Life and Health Behaviors



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CITATION AWARD WINNER

Paper Session 11

4:00 PM-4:15 PM

CARE FOR CAREGIVERS: AN EVIDENCE-BASED PSYCHOSOCIAL INTERVENTION TRIAL FOR CAREGIVERS OF STEM CELL TRANSPLANT RECIPIENTS

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Background: Informal family and friend caregivers of patients undergoing hematopoietic stem cell transplantation (HCT) experience substantial caregiving burden and psychological distress across the HCT continuum. We sought to assess the feasibility of a brief, tailored, multimodal psychosocial intervention (BMT-CARE) compared to standard care for caregivers of HCT recipients. In addition, we aimed to examine preliminary group differences in caregivers' quality of life (QOL), burden, mood, self-efficacy, and coping.

Methods: From 12/2017 to 4/2019, caregivers of HCT recipients at an academic medical center were enrolled and randomly assigned to receive either the BMT-CARE intervention or usual care, stratified by transplant type. Usual care included meeting with social work prior to HCT. BMT-CARE was usual care plus a six-session coping skills intervention that integrated medical information with cognitive-behavioral strategies specific to the HCT trajectory. Each caregiver met with a trained study therapist in person, by telephone, or by videoconference for four weekly and two semi-monthly sessions beginning prior to HCT and continuing after discharge. Feasibility metrics included a) accrual [$\geq 60\%$ of eligible caregivers] and b) attendance [$\geq 60\%$ of caregivers attend $\geq 50\%$ of sessions]. Caregivers completed study questionnaires including the CareGiver Oncology QOL, Hospital Anxiety and Depression Scale, Caregiver Reaction Assessment, Cancer Self-Efficacy Scale-Transplant, and Measures of Current Status at enrollment, 30 days post-, and 60 days post-HCT. Mixed linear effects models with Maximum Likelihood, adjusting for baseline values, were used to longitudinally assess group differences in caregiver outcomes.

Results: One hundred caregivers were enrolled and 92 were randomized to BMT-CARE (n=45) or usual care (n=47). Caregivers were a median age of 61 (range 22-93) and most were married to the patient (75/92, 81.5%). Feasibility was demonstrated with 73% of eligible caregivers enrolled (100/138) and 80% (36/45) attending $\geq 50\%$ (3/6) of sessions. Caregivers randomized to BMT-CARE reported improvements in QOL ($\beta=6.11$, $p < .001$, 95% CI [3.50, 8.71]) and decreased caregiving burden ($\beta=-6.02$, $p < .001$, 95% CI [-8.49, -3.55]) compared to those receiving usual care. In addition, those in BMT-CARE experienced reduced symptoms of anxiety ($\beta=-2.18$, $p < .001$, 95% CI [-3.07, -1.28]) and depression ($\beta=-1.23$, $p < .001$, 95% CI [-1.92, -0.54]) compared to the control group. Finally, compared to usual care, caregivers in BMT-CARE reported improvements in self-efficacy ($\beta=7.22$, $p=.003$, 95% CI [2.41, 12.03]) and coping skills ($\beta=4.83$, $p < .001$, 95% CI [3.04, 6.94]).

Conclusions: A brief psychosocial intervention tailored for caregivers of HCT recipients is feasible and may improve QOL, mood, coping, and self-efficacy while reducing caregiving burden during acute HCT recovery.

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Paper Session 11

4:15 PM-4:30 PM

POST-TRAUMATIC STRESS SYMPTOMS IN HEMATOPOIETIC STEM CELL TRANSPLANT (HCT) RECIPIENTS

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Background: HCT is an intensive and potentially curative therapy for patients with hematologic malignancies. Patients admitted for HCT experience a prolonged, isolating hospitalization and endure substantial physical and psychological symptoms. However, there is a paucity of research on the impact of HCT on long-term post-traumatic stress (PTSD) symptoms in transplant survivors. Furthermore, predictors of PTSD in this population have not been explored.

Methods: This secondary analysis included longitudinal data from 250 patients who underwent autologous and allogeneic HCT at Massachusetts General Hospital between 7/2013-1/2016. We used the Post-Traumatic Stress Checklist (PTSD-CL) to assess for PTSD symptoms at six months post-HCT. We used the Functional Assessment of Cancer Therapy – Bone Marrow Transplant, and the Hospital Anxiety and Depression Scale to assess quality of life (QOL) and depression and anxiety symptoms at the time of admission for HCT, at week-2 during HCT hospitalization, and at six months post-HCT. We used multivariate regression models to assess factors associated with PTSD symptoms. Given collinearity between QOL, depression, and anxiety symptoms, we modeled these separately.

Results: The mean age for study participants was 56.3 years (SD = 13.3). The majority were White (88.0%, 220/250), and female (51.2% 128/250). The rate of clinically significant PTSD symptoms at six months post-HCT was 18.9% (39/206). Participants with clinically significant PTSD symptoms experienced hypervigilance (92.3%), avoidance (92.3%), and intrusion (76.9%) symptoms. Among patients without clinically significant PTSD symptoms, 24.5% had clinically significant hypervigilance symptoms and 13.7% had clinically significant avoidance symptoms. Lower QOL at time of HCT admission ($B = -0.04$, $P = 0.004$), and being single ($B = -3.35$, $P = 0.027$) were associated with higher PTSD symptoms at six months post-HCT. Higher anxiety at time of HCT admission ($B = 1.34$, $P < 0.001$), change in anxiety during HCT hospitalization ($B = 0.59$, $P = 0.006$), and being single ($B = -3.50$, $P = 0.017$) were associated with higher PTSD symptoms at six months. In a separate model incorporating depression, younger age ($B = -0.13$, $P = 0.017$), being single ($B = -3.58$, $P = 0.018$), and higher baseline depression symptoms were also associated with higher PTSD symptoms at six months ($B = 0.97$, $P < 0.001$).

Conclusions: Approximately one fifth of patients undergoing HCT experience clinically significant PTSD symptoms at six months post-transplant. The prevalence of hypervigilance and avoidance symptoms are notable even among patients who do not have clinically significant PTSD symptoms. Patients' baseline QOL and psychological symptoms emerge as important predictors of their risk for PTSD at six months post-HCT. Interventions to prevent and treat PTSD symptoms in HCT recipients are clearly warranted.

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Paper Session 11

4:30 PM-4:45 PM

INFLAMMATORY AND CLINICAL RISK FACTORS FOR CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY (CIPN)

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Background: Chemotherapy-induced peripheral neuropathy (CIPN) is a common dose-limiting side effect of taxane and platinum chemotherapy. The sensory symptoms of CIPN include numbness, tingling, and cold sensitivity. The etiology of CIPN is not well understood, making it difficult to predict which patients will experience symptoms. Although inflammation has been suggested to play a role in CIPN in rodent models, evidence is limited in humans. Our goal was to identify the strongest predictors of CIPN utilizing patient-specific measures assessed before taxane or platinum chemotherapy, including serum measures of inflammation.

Methods: Fifty-five sedentary women with breast cancer (mean age 57 years) receiving taxane or platinum chemotherapy rated the severity of (1) numbness and tingling, and (2) hot/coldness in hands/feet on 0-10 scales before and after their first 6 weeks of chemotherapy. To identify predictors of CIPN, all possible linear regression models without interaction terms were fit to predict CIPN symptom severity at 6 weeks. Independent variables included those related to inflammation (serum IL-1 β , IL-6, IL-8, IL-10, IFN- γ , sTNFR1), clinical factors (cancer stage, baseline neuropathy, fatigue, anxiety, depression, using medications for diabetes [yes/no]), behavior (daily pedometer steps), and demographics (age at consent, race) measured before chemotherapy. The model with the lowest AIC goodness of fit was deemed the final model for identifying the strongest predictors of CIPN.

Results: The four strongest pre-chemotherapy predictors of numbness and tingling after 6 weeks of taxane chemotherapy included baseline neuropathy (explaining 28% of variance), stage I cancer vs. stage II-IV (17%), worse patient-reported fatigue/anxiety/depression (15%), and higher serum levels of the pro-inflammatory cytokine IFN- γ (12%). The four strongest predictors of hot/coldness in hands/feet included worse fatigue/anxiety/depression (26%), higher serum IFN- γ (18%), baseline neuropathy (14%), and platinum vs. taxane or platinum+taxane chemotherapy (11%).

Conclusions: The strongest pre-chemotherapy predictors of both numbness and tingling and hot/coldness in hands/feet included baseline neuropathy, worse fatigue/anxiety/depression, and pro-inflammatory IFN- γ . Clinicians should consider assessing these factors before initiating chemotherapy to inform the patient's risk for CIPN. These findings also suggest that inflammation may underlie the etiology of CIPN in humans.

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Paper Session 12

3:30 PM-3:45 PM

BUILT ENVIRONMENT, PHYSICAL ACTIVITY AND OBESITY: FINDINGS FROM THE IPEN ADULT STUDY

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Creating more physical activity-supportive built environments is recommended by the World Health Organization for controlling non-communicable diseases. The IPEN (International Physical Activity and Environment Network) Adult Study was undertaken to provide international evidence on associations of built environments with physical activity and weight status in 12 countries on five continents (n >14,000). This presentation includes re-analyzed data from eight primary papers to identify patterns of findings across studies. Neighborhood environment attributes, whether measured objectively or by self-report, were strongly related to all physical activity outcomes (accelerometer-assessed total physical activity, reported walking for transport and leisure) and meaningfully related to overweight/obesity. The differences in total physical activity minutes/week across the least and most activity-supportive neighborhoods were 35 minutes/week with environments measured by GIS and a similar 41 minutes/week by self-report measures. Relative effect sizes across the least and most activity-supportive neighborhoods accounted for up to a 13.3% difference in prevalence of overweight/obesity. Multi-variable indexes of built environment variables were more consistently related to all outcomes than single-environment variables. Designing activity-supportive built environments should be a higher international health priority. Results provide evidence in support of global initiatives to increase physical activity and control non-communicable diseases while achieving sustainable development goals.

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Paper Session 12

3:45 PM-4:00 PM

PICTURE THE STEPS: COMBINING SELF-REGULATION AND MENTAL IMAGERY TO INCREASE EXERCISE BEHAVIOR OVER 90 DAYS

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Purpose: The gap between health behavior intentions and actions is a key barrier to reducing chronic disease morbidity and mortality. We test whether a self-regulation intervention that incorporates mental imagery, administered after provision of personalized disease risk information, increases exercise over 90 days.

Methods: 500 community-dwelling adults aged 30-64, with < 150 minutes of exercise in the last week, and with < =1 (men) or 2 (women) comorbidities were randomized to one of six experimental conditions in a 3 (risk display format: text vs. table vs. risk ladder) x 2 (mental imagery topic: exercise vs. sleep hygiene [active control]) factorial design. Participants saw personalized risk and risk reduction estimates for up to 2 cancers and 3 chronic diseases in one of the 3 display formats. Participants completed a survey assessing cognitive and affective reactions to the risk information (results reported elsewhere). Then, they listened to an audiorecording that used mental imagery to guide them in developing goals related to exercising or sleep hygiene behaviors and in making plans for achieving those goals. Participants received text message reminders to complete the mental imagery for 3 weeks post-intervention, 4 weekly text message surveys, and a mailed survey 90 days post-baseline. Data were analyzed using ANCOVA. The primary outcome was a difference score in exercise minutes/week from baseline to 90-day followup. The predictor was mental imagery topic, and covariates were: risk display format, sex, race/ethnicity, age, education, health literacy, season, perceived intervention acceptability, and baseline minutes of exercise. After listwise deletion of missing data points and accounting for participants lost to follow-up (n=56), 420 participants were included in the analysis.

Results: The exercise imagery condition increased exercise over 90 days by 19.5 more minutes per week (95%CI: 2.0, 37.1) than the sleep condition (p=.03). This effect varied by risk display format (i.e., the interaction term between risk display format and mental imagery topic yielded p< .05). Post-hoc analyses that probed the interaction revealed that, for participants who saw a risk ladder, the exercise condition increased exercise by 92.2 minutes/week (95%CI: 67.4, 117.1), significantly more (p=0.006) than the increase of 37.5 minutes/week (95%CI: 11.1, 63.8) for the sleep condition. This effect was not observed in for the text or table risk display format conditions.

Conclusions: Self-regulation interventions that include mental imagery can increase exercise behavior over time, but the magnitude of the effect may vary based on what other intervention components individuals receive.

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Paper Session 12

4:00 PM-4:15 PM

A DYNAMICAL SYSTEMS MODEL OF THE IMMEDIATE EFFECTS OF MONETARY REINFORCEMENT ON PHYSICAL ACTIVITY

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Title: A Dynamical Systems Model of the Immediate Effects of Monetary Reinforcement on Physical Activity

Background: Contingency management interventions have demonstrated that financial rewards can increase and maintain moderate-to-vigorous physical activity (MVPA). Because these studies typically rely on self-reported measures of MVPA and/or non-immediate, infrequent presentation of MVPA-contingent rewards, the dynamic, immediate effect of monetary reinforcement on MVPA in real world settings has not been examined.

Methods: Participants (N=236) were asked to wear an ActiGraph GT9X wrist-worn accelerometer daily during awake hours for a year and to sync (i.e., upload) data from their accelerometer each day to our data servers. For each day, participants were presented with an MVPA goal and, after syncing, were informed of whether the goal was met. Financial reinforcement was provided for achieving daily goals with reward magnitude and frequency governed by a sequence of reinforcement schedules that participants progressed through. An automated cloud-based system was designed for this study and online 24 hours/day, 365 days per year to receive and process accelerometer data, determine goal achievement, calculate financial rewards, transmit text message feedback to participants, and send e-gift cards, when appropriate. For each participant, a person-specific, lag-linear dynamical systems model was built that allowed the magnitude and duration of the monetary reinforcement's effect on MVPA to be examined. Results were considered in aggregate to gain a general understanding of how financial rewards affected behavior in this trial.

Results: For 70 participants (30%), receiving a financial reward had a significant effect on MVPA within 3 days. For 18 (26%) of these participants, reinforcement had an effect after 1 day had elapsed, while for 26 (37%) and 25 (36%), reinforcement had an effect after two or three days, respectively. The direction of one-day effects vs. two/three-day effects on MVPA min/day were qualitatively different, with the 25th/75th percentile of regression coefficients of significant one-day effects ranging from 12.3 to 19.6 while 2-day and 3-day effect quartiles ranged from -16.1 to 17.0 and -8.9 to 18.1, respectively. These results suggest that 1-day effects of reinforcement were generally associated with increases in MVPA; 2-day and 3-day effects, however, were significant more frequently, but associated with both increases and decreases in MVPA.

Discussion: In the short term, when monetary rewards had an effect, it tended to increase MVPA. Longer-term effects though could either promote or inhibit MVPA, with the latter potentially due to the effects of activity or the use of non-activity as a reward. Understanding these phenomena will help improve the design of MVPA-promoting interventions.

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Paper Session 12

4:15 PM-4:30 PM

TESTING A BRIEF INTERVENTION TARGETING REMEMBERED AFFECT AND SELF-EVALUATIONS IN EXERCISE: AN EXPERIMENTAL MEDICINE APPROACH

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Objective: How pleasantly an exercise bout is remembered and positive self-evaluations post-exercise are prospectively associated with physical activity (Kangas et al., 2015; Kwan et al., 2017). Thus, post-exercise remembered affect (RA) and self-evaluations (SE) are promising intervention targets to increase physical activity. Actively reflecting on the positive aspects of an exercise bout could be an effective approach to target post-exercise RA and SE (see Peters et al., 2010). We tested a brief guided reflection intervention delivered at the end of an exercise bout on RA and SE. We also examined the effects of post-exercise RA and SE on physical activity during the subsequent week.

Methods: Participants (N = 84) were healthy young adults (66% female, 71% Caucasian, mean age = 20.0 years, mean BMI = 22.9) who completed a 15-minute, vigorous intensity treadmill bout. During the 3-minute cool down, participants were randomized to: 1) a brief audio recording to guide active reflection on positive aspects of the exercise bout, or 2) no audio recording. The recording included guided reflections on benefits of exercise, accomplishment on completing it, and mindful awareness. RA, assessed on a scale from +100 (*very pleasant*) to -100 (*very unpleasant*), and SE, assessed on a scale from 1 (*very bad about myself*) to 7 (*very good about myself*), were both measured 15 minutes post-exercise. Participants received a hip-worn accelerometer to wear for the next 7 days to assess moderate-to-vigorous physical activity (MVPA). Analyses were guided by an experimental medicine approach (Riddle et al., 2015) in which we tested (a) the intervention effect on RA and SE (using linear regression), and (b) the effect of RA and SE on MVPA minutes (using gamma regressions, controlling for baseline MVPA and intervention condition).

Results: The brief guided reflection intervention did not have a significant effect on post-exercise RA ($t = 0.45$, $p = 0.67$) or SE ($t = 1.64$, $p = 0.11$). However, post-exercise RA (Wald chi-square = 6.20, $p = .013$) and SE (Wald chi-square = 4.15, $p = .042$) both significantly predicted MVPA minutes during the subsequent week.

Conclusions: The intervention was not effective in changing post-exercise RA and SE. Given that both targets predicted MVPA minutes, findings suggest they are viable intervention targets to increase physical activity but a different intervention strategy is needed to change them. Alternative approaches will be discussed.

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Paper Session 12

4:30 PM-4:45 PM

CHANGES IN DELAY DISCOUNTING RATE FOLLOWING THE WALKIT ARIZONA INTERVENTION

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Background: Delay discounting (DD) refers to the tendency to devalue distant consequences in favor of those that are more proximal: individuals with higher discounting rates are more likely to select smaller, immediate rewards over larger, delayed rewards. Evidence suggests DD is predictive of unhealthy behaviors, but research on change in DD rates over time is limited, particularly as an unintended consequence of interventions to enhance health-promoting behavior like physical activity. The current study examined changes in DD across participants' enrollment in WalkIT Arizona, a 12-month, 2x2 factorial trial testing mHealth interventions to increase physical activity among healthy, insufficiently active adults.

Methods: DD rate scores were obtained for 423 adults (64.5% female, ages 18-60, median education = college graduate, median income = \$40,000-59,000) who completed the 27-item Monetary Choice Questionnaire (MCQ) at baseline (BL) and after completing the 12-month intervention. Overall delay discount rate (k value) was calculated at each time point by computing the geometric mean of small, medium, and large magnitude MCQ trials. A natural log transformation was applied to address skewness. Changes in DD (ln geomean k) were evaluated using ANOVAs with time (within-person) and intervention condition (between-person) factors, adjusting for potential confounders (age, sex, education, household income).

Results: Across conditions, DD significantly increased from BL to 12 months, $t(422) = -5.20$, $p < .001$. A significant Time x Reward Schedule interaction was found ($F = 10.45$, $p = .001$), such that participants receiving immediate financial incentives showed a greater increase in DD relative to delayed rewards at 12 months. Participants receiving static goals displayed larger DD rates at both time points compared to those with adaptive goals, but neither this main effect nor the Time x Goal Type interaction was significant.

Conclusion: Overall delay discounting rate increased with completion of a 12-month intervention utilizing financial incentives to increase physical activity; this increase was greatest among participants receiving immediate financial incentives. Further analysis should examine the stability of this change and effects on maintaining physical activity in the absence of financial rewards.

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Paper Session 13

3:30 PM-3:45 PM

“MINDFUL MOMS”- A MINDFUL PHYSICAL ACTIVITY INTERVENTION FOR PERINATAL DEPRESSION

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Objective: Nearly 20% of women experience clinically significant depressive symptoms during pregnancy, yet many pregnant women are concerned about stigma, adverse effects, and/or costs of “usual care” for depressive symptoms (e.g., antidepressants, psychotherapy). To address the need for an accessible, non-pharmacologic, complementary approach for these women, we seek to evaluate the effects of a 12-week group-based mindful physical activity program (“Mindful Moms”), which involves group prenatal yoga, home-based physical activity, and aspects of motivational interviewing.

Methods: In this NIH/NICHD-funded mixed-methods pilot trial, we examined preliminary effects of the “Mindful Moms” intervention on maternal depressive symptoms, perceived stress, and anxiety from baseline to end of intervention in pregnant women with high depressive symptom severity at baseline ($n=41$). Qualitative data were collected through semi-structured interviews with participants in order to inform and explain the quantitative findings.

Results: Overall, there was a significant effect of time on depression ($F_{3,86} = 35.04$, $p < 0.0001$), stress ($F_{3,84} = 17.30$, $p < 0.0001$), and on anxiety ($F_{3,81} = 11.05$, $p < 0.0001$). Analysis of qualitative data is on-going using phenomenology as a method of inquiry and will be complete in time for SBM 2020; preliminary analysis suggests that the intervention provided a sense of empowerment for participants which enabled them to engage in self-management of their depressive symptoms.

Conclusions: Findings from this study address the urgent need for adjunctive treatments for depressive symptoms in pregnancy, particularly those that target self-management of current symptoms and prevention of recurrent symptoms.

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Paper Session 13

3:45 PM-4:00 PM

THE MINDFULNESS-PSYCHOLOGICAL SYMPTOMS LINK VIA SPIRITUAL WELL-BEING IN ADVANCED LUNG CANCER PATIENTS AND SPOUSAL CAREGIVERS

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Objectives: Given the incurable nature of the disease, metastatic lung cancer (LC) patients and their spousal caregivers are at high risk of psycho-spiritual symptom burden and overall quality of life (QoL) deficits. It has been recognized that mindfulness enhances QoL through spiritual well-being. Based on interdependence theory, which has been translated into couples coping with cancer, we hypothesized that caregivers’ mindfulness would be associated with patients’ lower psychological symptoms via their own and patients’ spiritual well-being, and vice versa.

Methods: In this cross-sectional study, we examined the actor-partner interdependent model of mediation (APIMeM) with 78 couples, who were stage IV LC patients and their spousal caregivers. A total of 4 APIMeM analyses were conducted: 1 predictor (mindfulness) \times 2 mediators (meaning/peace, faith) \times 2 outcomes (depressive symptoms, cancer distress). We conducted structural equation modeling with 1,000 bootstrapped resamples controlling for covariates (gender, age, relationship length). Missing data was treated with full information maximum likelihood method.

Results: Direct effects were found: 1) from caregivers’ mindfulness to patients’ meaning/peace (*partner effect*: 2.43, $p < .05$); 2) from patients’ meaning/peace to their own depressive symptoms (*actor effect*: -.86, $p < .001$) and cancer distress (*actor effect*: -1.25, $p < .05$); and 3) from caregivers’ meaning/peace to their own depressive symptoms (*actor effect*: -.73, $p < .001$) and cancer distress (*actor effect*: -.86, $p < .05$). Indirect effects of meaning/peace were also found: 1) from caregivers’ mindfulness to their own depressive symptoms (*actor effect*: -2.53, $p < .01$) and cancer distress (*actor effect*: -2.53, $p < .01$) via their own meaning/peace and 2) from caregivers’ mindfulness to patients’ depressive symptoms via patients’ meaning/peace (*partner effect*: -2.08, $p < .05$). However, indirect effects of faith were not found.

Discussions: This is the first study that examined spiritual well-being as a mediator in the link between mindfulness and psychological symptoms in cancer patients and spousal caregivers. Results highlight the interdependence of mindfulness, meaning/peace and psychological symptoms between patients and caregivers. Mindfulness-based interventions for palliative cancer care need to focus on meaning/peace of both patients and caregivers to reduce their psychological symptoms and eventually enhance their QoL. Future studies should assess other aspects of mindfulness, spirituality, and QoL at more than one time point in the dyads.

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Paper Session 13

4:00 PM-4:15 PM

FEASIBILITY, ACCEPTABILITY, AND USABILITY OF A MINDFULNESS SMARTPHONE APPLICATION

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Growing evidence supports the efficacy of mindfulness-based interventions for improving psychological well-being. However, mindfulness researchers report difficulty objectively measuring home practice adherence. To address this limitation, we developed a novel application (app) that is readily available to researchers, provides reliable tracking of participants' home practice adherence, and offers customizable audio-based practice recordings. The current study assessed the feasibility, acceptability, and usability of the smartphone app.

Participants ($N=19$) were recruited from one of three community-based mindfulness programs to field test the app. A brief, nondirective task-based assessment (TBA) with a research assistant served as a one-on-one app orientation. Participants then completed the validated 10-item System Usability Scale (SUS) and were asked to use the app as their sole method of home mindfulness practice. After field testing and finishing their mindfulness course, participants again completed the SUS and a satisfaction survey. Qualitative data were collected during the TBA and satisfaction survey.

Participants were mostly female (84%) and White (74%) with an average age of 43 years ($SD = 16$). Regarding feasibility, 90% of testers used the app at home at least once ($M_{\text{use/week}}=3.4$, $SD=2.6$), and 100% completed all outcome measures. The app was acceptable with the 9 satisfaction items averaging 3.9 on a 5-point scale ($SD=0.9$). SUS results ($M_{\text{post-TBA}}=91$, $M_{\text{post-field testing}}=84$) suggest the app was highly usable and easy to learn, with scores corresponding to system usability at the 95th percentile or higher. Only one participant reported an issue in field testing, which was resolved with technical support.

Analysis of qualitative feedback revealed the app was generally well-received. Unprompted, the majority of testers noted the ease of use and simple interface. During the TBA, testers found several problems (e.g., difficulty downloading the app on cellular data) and provided suggestions for improvement, such as adding customizable practice reminders or a goal-setting feature.

All predetermined feasibility, acceptability, and usability goals were exceeded, suggesting the app is user-friendly and ready for use in future mindfulness clinical trials. This app may provide researchers with a reliable way of measuring home practice adherence and calculating dosage effects of mindfulness home practice on study outcomes.

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CITATION AND MERITORIOUS AWARD WINNER
Paper Session 13 4:15 PM-4:30 PM

PRELIMINARY VALIDATION OF THE COGNITIVE AFFECTIVE MINDFULNESS SCALE-REVISED (CAMS-R) IN CANCER POPULATIONS

Kelly Chinh, M.S.¹, Ekin Secinti, M.S.², Shelley A. Johns, PsyD³, Patrick V. Stutz, B.A.³, Patrick O. Monahan, PhD⁴, Catherine E. Mosher, Ph.D.⁵¹Indiana University - Purdue University Indianapolis, Indianapolis, IN; ²Indiana University Purdue University Indianapolis, Indianapolis, IN; ³Indiana University School of Medicine, Indianapolis, IN; ⁴Indiana University, Indianapolis, IN; ⁵Indiana University-Purdue University Indianapolis, Indianapolis, IN

Growing evidence supports the use of mindfulness-based interventions with cancer populations. However, few self-report measures of mindfulness, a key potential mechanism of these interventions, have been validated in cancer populations. To reduce patient burden, a short yet comprehensive measure of mindfulness is needed. Thus, the aim of this study was to examine the factor structure, internal consistency, and construct validity of the Cognitive Affective Mindfulness Scale-Revised (CAMS-R) in cancer patients.

Patients with breast, gastrointestinal, lung, or prostate cancer were recruited from academic and public clinics in Indianapolis, IN to participate in a cross-sectional survey. Participants were primarily White (80%) with an average age of 63 years ($SD=11$), and half were women (51%). Group 1 ($n=196$) consisted of stage I-II survivors ≥ 6 months post-curative treatment while Group 2 ($n=194$) consisted of patients with stage IV disease on active or supportive treatment. Patients completed the 10-item CAMS-R and other psychological measures. We modified CAMS-R instructions to focus on the past two weeks. Confirmatory factor analysis (CFA) was used to examine the dimensionality of the measure for each group. Internal consistency of the CAMS-R was calculated, and construct validity was assessed through correlations with theoretically-related variables.

CFA showed that the original CAMS-R 4-factor, second order structure had adequate fit for both samples (Group 1: $\chi^2=115.65$, $p<.001$, $RMSEA=.12$, $CFI=.91$, $SRMR=.05$; Group 2: $\chi^2=107.69$, $p<.001$, $RMSEA=.11$, $CFI=.92$, $SRMR=.05$). Factors included attention, present focus, awareness, and acceptance, along with an overarching mindfulness construct. Internal consistency in each group was excellent (Groups 1 and 2: $\alpha=.90$). In both groups, the CAMS-R showed significant positive associations with commonly used mindfulness and self-compassion questionnaires (Group 1: $rs=.60-.68$; Group 2: $rs=.62-.64$). In addition, the CAMS-R showed significant negative associations with anxiety, depressive symptoms, rumination, psychological inflexibility, and avoidant coping (Group 1: $rs=-.37--.57$; Group 2: $rs=-.34--.58$).

Findings provide preliminary support for the use of the modified CAMS-R with cancer patients. Future research should assess the CAMS-R's sensitivity to change in an interventional context.

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Paper Session 13

4:30 PM-4:45 PM

PARTNERSHIP TO ADAPT A TELEPHONE-BASED MINDFULNESS PROGRAM FOR DIVERSE PRIMARY CARE LATINA PATIENTS

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Background: Hypertension is a well-known risk factor for cardiovascular disease (CVD). Targeting prehypertension can prevent or delay progression to hypertension and thereby reduce CVD risk. Mindfulness-based interventions have been shown to improve psychological functioning and reduce blood pressure, however, applications to low-income, Spanish-speaking Latino adults is unknown. The aim of this study was to translate and culturally adapt a telephone-delivered version of mindfulness-based cognitive therapy through formative research with diverse Latina populations in San Diego, CA and New York, New York.

Methods: We conducted focus groups with Spanish-speaking Latina patients at a large Federally-Qualified Health Center (FQHC) in the US-Mexico border region of San Diego, CA (SD) and a large public hospital in New York City (NYC). Topics included experiences of stress, coping strategies, perceived need for stress management and interest in mindfulness programs. Feedback was also collected on the proposed recruitment and intervention materials.

Results: The sample consisted of 64 middle-aged Latina women (mean age = 54 [SD] and 59 [NYC]), the majority of whom who were born outside the US (SD=85%, NYC=73%). Key sources of stress included illness, time, finances, work (NYC), and traffic (SD). The majority of participants at both sites reported being moderately or extremely interested in learning skills to help deal with stressful situations (SD=91%, NYC=73%). Women in NYC were more likely than those in SD to consider participating in a phone-based stress management program with other Latina women (87% and 35%, respectively). Almost all reported access to a mobile phone. Perceived barriers to participating in the program included uncertainty about program benefits, access and lack of time. Program materials and study protocols were modified based on participant feedback, e.g., simple language, study branding, emphasis of clinic partners' involvement to mitigate issues around trust.

Conclusion: Differences observed in the SD and NYC samples informed modifications to the respective study protocols and recruitment materials for pilot clinical trials being conducted at each site. If found to be effective, this innovative, scalable mindfulness intervention may be a promising strategy to prevent hypertension and CVD among diverse women. Patient-, provider- and healthcare system-related implementation issues and lessons learned will be discussed.

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Paper Session 14

3:30 PM-3:45 PM

NEGATIVE AFFECT MEDIATES THE RELATIONSHIP BETWEEN DISPOSITIONAL MINDFULNESS AND DIETARY INTAKE AMONG HEALTHY MIDLIFE ADULTS.

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Background: Emerging evidence suggests that mindfulness, a practice of non-judgmental awareness of present experience, may reduce eating psychopathology and emotion-driven eating. However, few studies have explored the relationship between mindfulness and normative dietary patterns or sought to identify factors that mediate the effect of mindfulness on diet.

Methods: Community-dwelling midlife participants (N=406; Mage=43.19, SD=7.26; MBMI=27.08, SD=5.28; 52% female) reported dispositional mindfulness using the Mindful Attention Awareness Scale, and positive affect (PA) and negative affect (NA) using the Positive and Negative Affect Schedule. Dietary intake was assessed using the Block Food Frequency Questionnaire. Direct and mediating effects of dispositional mindfulness, PA, and NA on intake of calories and macronutrients were analyzed using the PROCESS macro with bias-corrected bootstrapped confidence intervals (BootCI). Age, sex, education and weight were entered as covariates in all models.

Results: Higher dispositional mindfulness was associated with lower intake of calories ($\beta=-0.143$, $p<0.01$) protein ($\beta=-0.110$, $p=0.02$), carbohydrates ($\beta=-0.112$, $p=0.02$), and total fat ($\beta=-0.153$, $p<0.01$), but not cholesterol ($\beta=-0.076$, $p=0.12$) or sugar ($\beta=-0.073$, $p=0.13$). NA significantly mediated the relationship between dispositional mindfulness and intake of calories ($\beta=-0.077$, BootCI=-0.149, -0.013), protein ($\beta=-0.076$, BootCI=-0.152, -0.007), carbohydrates ($\beta=-0.068$, BootCI=-0.139, -0.007), and fat ($\beta=-0.074$, BootCI=-0.146, -0.011) such that higher mindfulness was associated with lower intake through lower NA. PA was significantly positively correlated with dispositional mindfulness but did not mediate any relationship between mindfulness and dietary intake.

Conclusions: Among healthy community adults, higher dispositional mindfulness was associated with lower NA, which in turn was related to lower intake of protein, carbohydrates, and fat. Although higher dispositional mindfulness was correlated with higher PA, PA was not associated with dietary intake, indicating that the affective pathway linking mindfulness to diet may be specific to NA. These cross-sectional findings suggest that mindfulness may influence normative dietary patterns, in part, by reducing negative affect.

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Paper Session 14

3:45 PM-4:00 PM

PAIN OVEREATING: FURTHER INVESTIGATION OF THE YALE EMOTIONAL OVEREATING QUESTIONNAIRE IN WEIGHT LOSS SEEKING PATIENTS

Robin M. Masheb, PhD¹, Alison G. Marsh, B.A.², Amanda M. Kutz, n/a³, Megan Douglas, Ph.D.⁴, Mary A. Driscoll, PhD⁵¹Yale School of Medicine/VA CT Healthcare System, North Haven, CT; ²VA Connecticut Healthcare System, Wakefield, MA; ³Salt Lake City VA Healthcare System, Salt Lake City, UT; ⁴Baylor Scott & White Institute for Research, Dallas, TX; ⁵VA Connecticut Healthcare System, Newtown, CT**Objectives:** Providers and patients frequently report pain as a barrier to weight loss. However, the relationship between pain and eating behavior is not well understood. Given the high independent rates of overweight and chronic pain in the Veteran population, the current study investigates overeating in response to physical pain (Pain Overeating) in a sample of weight-loss seeking Veterans.**Methods:** Veterans (N = 126; 89.7% male; 75% white) with overweight/obesity (BMI = 38.0), who attended orientation sessions for weight management treatment at VA Connecticut Healthcare System, were consecutively evaluated. Participants completed the Yale Emotional Overeating Questionnaire (YEOQ), a measure used to assess the frequency of overeating in response to a range of emotions that was adapted to include a Pain Overeating item (i.e., on how many days out of the past 28 days have you eaten an unusually large amount of food, given the circumstances, in response to feelings of physical pain). They also completed, a validated measure of pain. Pain Overeating, and its associations with Body Mass Index (BMI), short-term pain intensity and interference, and validated measures and screeners for eating pathology and mental health were examined.**Results:** Short-term, clinically meaningful pain was common in over 50% of this sample. The YEOQ was internally consistent ($\alpha = .95$), and the new pain item was significantly and moderately correlated with all other YEOQ items (range .37 to .78). Fifty-one participants (42.5%) engaged in at least one overeating episode in the past month in response to physical pain, and 17 (14.2%) engaged in this behavior daily. Pain Overeating was significantly related to short-term pain intensity and interference scores ($r = .60, p < .01$). Pain Overeating accounted for unique and statistically significant variance in predicting BMI ($\beta = .23, p = .04$), eating disorder pathology ($\beta = .23, p = .04$) and depression ($\beta = .26, p = .01$), but not PTSD.**Conclusions:** Pain Overeating is common in a large subset of Veterans seeking weight loss treatment, and is associated with high short-term pain intensity and interference rating scores. When present eating in response to physical pain may also have serious implications for weight, pathological eating behavior and mental health. Findings suggest eating behavior in relation to pain be addressed in Veteran weight loss efforts.

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Paper Session 14

4:00 PM-4:15 PM

EXAMINATION OF THE BIOSOCIAL MODEL AS A THEORY OF EMOTIONAL EATING

Abby Braden, PhD¹, LaNaya Anderson, MA¹, Rachel Redondo, BA¹, Tanya S. Watford, M.S.², Elizabeth Emley, MA¹, Emily L. Ferrell, n/a¹¹Bowling Green State University, Bowling Green, OH; ²Bowling Green State University, Boise, ID**Background:** Behavioral interventions using adapted versions of Dialectical Behavioral Therapy (DBT) have been used to target emotional eating (EE). DBT is based on the Biosocial Model which claims that emotional sensitivity and childhood invalidation combine to influence the development of psychological and behavioral problems. According to this theory, emotional sensitivity and invalidation interfere with the development of adaptive emotion regulation, leading to unhealthy emotion regulation strategies. Adapted DBT programs that target EE assume that emotional sensitivity, childhood invalidation, and emotion dysregulation are mechanisms of EE. However, no studies have directly examined whether the Biosocial Model is supported as a possible explanation for EE. The current study aimed to examine whether emotion regulation difficulties mediated relationships between biosocial variables (i.e., emotional sensitivity and childhood invalidation) and EE.**Methods:** Adults (n = 256; age = 36.52 ± 11.02 ; 50% female) were recruited using Amazon Mechanical Turk. Body mass index (BMI) was calculated from self-reported height and weight. EE was assessed with the depression subscale of the Emotional Eating Scale (EES). The Difficulties in Emotion Regulation Scale (DERS), the Invalidating Childhood Environment Scale (ICES; mother and father subscales), and the Perth Emotional Reactivity Scale (PERS) were also administered. Three separate mediation analyses were performed using Preacher and Hayes' (2017) SPSS macro for bootstrapping methods.**Results:** Results revealed that the relationship between ICES-mother and EES was mediated by DERS (indirect effect = 0.42, $SE = 0.07$, 95% CI = 0.30, 0.57). Results also showed that the relationship between ICES-father and EES was mediated by DERS (indirect effect = 0.37, $SE = 0.07$, 95% CI = 0.25, 0.51). Finally, the relationship between PERS and EES was mediated by DERS (indirect effect = 0.02, $SE = 0.01$, 95% CI = 0.01, 0.03). When gender and BMI were entered as covariates, results were unchanged.**Conclusions:** The current study is limited by a cross-sectional design, but it is a first step toward showing that relationships between biosocial variables (i.e., emotional reactivity and perceived invalidation from mother and father) and EE may be explained by poor emotion regulation. Consequently, targeting emotion regulation in treatment may improve EE outcomes.

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Paper Session 14

4:15 PM-4:30 PM

ASSOCIATIONS BETWEEN A WEIGHT LOSS ATTEMPT, FOOD PLANNING BEHAVIORS, AND THE HOME FOOD ENVIRONMENT

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Approximately 50% of U.S. adults report a weight loss attempt in the past year. Those making a weight loss attempt may engage in more food planning behaviors to create a healthier home food environment (HFE) and facilitate weight loss. We hypothesized that those who report a weight loss attempt would endorse more frequent meal planning and grocery list use, resulting in fewer obesogenic foods and more fruits and vegetables (FV) in the home. This was a secondary data analysis. Over 14 days, researchers entered 196 participants' homes four times, collecting data on demographics, the HFE, and food planning behaviors (age M=44.38 yrs.; 83.7% female; 82.15% not Latino). Four separate regressions with mediation were used to analyze whether food planning behaviors explained the relationship between a weight loss attempt and the HFE. A reported weight loss attempt in the past year was the independent variable (Yes=1; No=2); percent of obesogenic foods and FV in the home were the two dependent variables; frequency of meal planning and grocery list use were the two mediators. Meal planning did not explain the relationship between a weight loss attempt and obesogenic foods, ($b=0.000$, 95% CI [-0.001, 0.002]) or FV in the home ($b=0.000$, 95% CI [-0.001, 0.002]). Grocery list use did not explain the relationship between a weight loss attempt and obesogenic foods ($b=0.000$, 95% CI [-0.002, 0.002]) or FV in the home ($b=0.000$, 95% CI [-0.001, 0.002]). Since a BMI of 28.0 reflects a threshold for when an individual may attempt to lose weight, post-hoc mediation analyses only included participants with BMIs >28.0 ($N=112$). Making a weight loss attempt was associated with fewer obesogenic foods ($t=3.24$; $p=.002$) and more FV ($t=-2.25$; $p=.026$) in the home, but mediation analyses, evaluating food planning behaviors, were non-significant ($ps>.05$). Food planning behaviors may be used for reasons aside from losing weight, such as time management and organization. The historical nature of the weight loss question and not knowing the success of the weight loss attempts were limitations. Results indicated that foods in the HFE may be different in the context of a weight loss attempt, in individuals with BMIs >28.0. Since the HFE accounts for a majority of calories consumed, future studies should evaluate planning strategies, such as meal preparation, that could influence the HFE to help develop effective weight loss strategies.

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Paper Session 14

4:30 PM-4:45 PM

LONGITUDINAL FAST FOOD CONSUMPTION TRAJECTORIES AND RELATED PHYSICAL AND MENTAL HEALTH OUTCOMES

Lindsay M. Stager, B.A.¹, Aaron D. Fobian, PhD¹¹The University of Alabama at Birmingham, Birmingham, AL

Obesity represents a leading U.S. public health issue. While past research has uncovered many factors related to adolescent eating behaviors, there is a lack of longitudinal research regarding health outcomes of fast food consumption across the transition into adulthood. This gap is critical, as fast food consumption relates to multiple negative health outcomes including obesity.

The present study used data from The National Longitudinal Study of Adolescent to Adult Health, focusing on 9,421 participants who reported on fast food consumption in waves II-IV (49.5% male; 53.4% white, 21.6% Black, and 16.9% Hispanic). A group based modeling technique (PROC TRAJ) was used to determine fast food consumption trajectory groups across these waves. Groups were then used as predictors of wave IV inflammation (measured using CRP) and depression (measured using the CESD) in two separate ANCOVAs.

Four fast food consumption trajectory groups emerged. Group 1, "low", had the overall lowest consumption. Group 2, "spike", had high consumption at wave III, followed by reduced consumption at wave IV. Group 3, "raised", increased consumption across waves, ending with the second highest consumption at wave IV. Group 4, "max" followed a similar trajectory as group 3, but ended with markedly higher consumption at wave IV.

Trajectories were significantly related to outcomes of CRP and depression. Group 4 had significantly higher CRP as compared to individuals in groups 1 (adj. Mdif= 2.02, SE=.89; $t(128) = 2.25$, $p=.03$), 2 (adj. Mdif= 2.23, SE=.90; $t(128) = 2.48$, $p=.01$), and 3 (adj. Mdif= 2.23, SE=.91; $t(128) = 2.45$, $p=.02$). Group 1 also had significantly higher levels of CRP than individuals in group 2 (adj. Mdif= 0.21, SE=.10; $t(128) = 2.18$, $p=.03$).

Group 4 had significantly elevated depressive symptomology as compared to groups 1 (adj. Mdif= 0.26, SE=.07; $t(128) = 3.98$, $p=.00$) and 2 (adj. Mdif= 0.23, SE=.08; $t(128) = 3.01$, $p=.00$). Group 3 also had significantly higher levels of depressive symptomology than groups 1 (adj. Mdif= 0.14, SE=.03; $t(128) = 4.49$, $p<.0001$) and 2 (adj. Mdif= 0.11, SE=.04; $t(128) = 2.39$, $p=.02$).

Overall, this study highlights the impact of fast food consumption in specific areas of physical and mental health across the transition from adolescence to adulthood. Given the observed relationships, fast food companies may be encouraged to improve the nutritional quality of their food products, and policy change regarding fast food's labeling may be warranted.

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Paper Session 15

3:30 PM-3:45 PM

REAL-TIME CONTINUOUS GLUCOSE MONITORING AS A BEHAVIOR CHANGE TOOL IN TYPE 2 DIABETES SELF-MANAGEMENT: A SYSTEMATIC REVIEW

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Background: Real-time continuous glucose monitoring (RT-CGM) allows for the continuous measurement of interstitial glucose levels and the evaluation of detailed blood glucose profiles in patients with type-2 diabetes (T2D). Recent studies note that RT-CGM can be a valuable motivational tool to change patients' lifestyle and to improve their quality of life. Thus, this review seeks to synthesize the existing literature for reported effectiveness of behavioral interventions that incorporate RT-CGM as a behavior-change tool when compared to standard clinical care in patients with T2D.

Methods: A search was conducted in MEDLINE, Embase, CINAHL, PsycINFO, ClinicalTrials.gov and Cochrane for studies published between January 2000 and August 2019 that incorporate the use of RT-CGM into behavioral interventions for T2D self-management. Articles were included if they: 1) evaluated an unblinded RT-CGM as an behavior-change tool for T2D, and 2) used a randomized control trial design. Two coders independently reviewed abstracts and extracted data, and discrepancies were resolved through discussion.

Results: Initially, 2562 were screened for eligibility. After removing studies not including the use of RT-CGM as a self-management tool nor as a component of a behavioral intervention (n = 368), not using a randomized control trial design (n = 998), and not evaluating patients with T2D (n = 1186), a total of 13 met the inclusion criteria. The intervention protocols of included studies varied by type of guidance patients received while wearing the RT-CGM device. Eight studies provided patient's with a general overview of RT-CGM use prior to the start of the intervention, 4 studies provided moderate instruction and lifestyle education periodically throughout the intervention, and 1 study provided detailed guidance, individualized education, and behavioral counseling throughout the intervention. Patient clinical and behavioral outcomes are also reported. Significant improvements in measured outcomes were observed more often following short-term compared to long-term intervention periods (e.g., 8 weeks vs. 24 weeks).

Conclusion: This review provides evidence to suggest that RT-CGM can be a valuable behavior-change tool for successfully reaching short-term health goals, particularly when coupled with individualized T2D education. This review could guide future research and development of technology-assisted interventions that address patient self-management of T2D.

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Paper Session 15

3:45 PM-4:00 PM

BEHAVIOURAL AND PSYCHOSOCIAL CHARACTERISTICS AMONG ADULTS AT DIFFERENT STAGES OF TYPE 2 DIABETES DIAGNOSIS.

Jillian Ryan, B Psych (Hons), PhD¹, Ian Zajac, PhD¹, Sinead Golly, PhD¹, Bonnie Wiggins, B Psych (Hons), Masters of Marketing¹, David Cox, PhD¹¹Commonwealth Scientific and Industrial Research Organisation, Adelaide, South Australia, Australia

Landmark prevention trials have shown that the onset of Type 2 diabetes can be prevented in at-risk individuals through interventions that address the disease's lifestyle-related determinants. Yet prevalence has tripled in the past three decades and continues to rise, suggesting that community uptake of programs and advice has been limited outside of controlled trials. A possible explanation is that current interventions fail to address the complex range of psychosocial challenges that serve as barriers to adoption of the necessary lifestyle changes in diverse populations. To explore this hypothesis, the current study takes a data-driven approach to identifying key behavioural and psychosocial intervention objectives that may be overlooked in current offerings. Adults (N = 3206) at different stages of diabetes diagnosis (no diagnosis, at-risk, and with type 2 diabetes) completed a comprehensive battery of self-report assessments spanning behavioural (e.g. physical activity, diet, and smoking status), psychosocial (consideration of future consequences, health literacy, and psychological distress) and demographic factors (sex, age, and financial security). The extent to which outcome variables predicted membership to healthy, at-risk, or T2 diabetes subgroups was examined using multinomial logistic regression. The model was statistically significant, $p < .0001$ and explained 27.0% (Nagelkerke R²) of the variance in diabetes status. Of outcomes assessed being male, financially insecure, physically inactive, and favouring immediate over future consequences were the strongest predictors of being at-risk or with Type 2 diabetes. Lower health literacy and financial security were unique characteristics of membership to the Type 2 diabetes diagnosis subgroup, suggesting that these may be an important factor mediating the progression to diabetes. In this paper, differences in behavioural, psychosocial, and demographic profiles between subgroups with different diabetes diagnoses are interrogated, with insights framed to guide the development of effective programs in the future. Such data-driven approaches can inform the development of human-centred prevention programs to more effectively address stubborn public health problems.

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CITATION AWARD WINNER

Paper Session 15

4:00 PM-4:15 PM

PEER COACH DELIVERED STORYTELLING PROGRAM IMPROVED DIABETES MEDICATION ADHERENCE: A CLUSTER RANDOMIZED TRIAL

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Background: Because good adherence to medications is linked to better patient outcomes in diabetes, there have been numerous interventions to improve medication adherence. However, suboptimal adherence persists, and the modest effects seen in prior programs necessitate continued research into intervention strategies. Storytelling and peer support are promising approaches for improving diabetes self-care. The purpose of this study was to evaluate the effectiveness of an intervention that combined storytelling and peer support to improve medication adherence and health outcomes in individuals with diabetes.

Methods: Living Well with Diabetes was a cluster randomized controlled trial in Alabama adults living with diabetes. Intervention participants received a six-month, peer-delivered telephone program that consisted of education and behavioral strategies to improve medication adherence and other self-care activities. Educational videos integrated personal stories of community members accepting their illness and overcoming barriers to medication-taking, and peer coaches reinforced these messages during telephone sessions. Control participants received a self-paced general health advice program. Outcomes were changes in medication adherence and physiologic measures (hemoglobin A1c, systolic blood pressure, low-density lipoprotein cholesterol, body mass index). Explanatory outcomes were medication beliefs and medication use self-efficacy.

Results: Of the 403 participants with follow-up data, 78% were female, 91% were African American, 56.4% had high school education or less, and 70% had an annual income of < \$20,000. At follow-up, compared to controls, intervention participants had greater improvement in medication adherence ($\beta = -0.25$ [-0.35, -0.15]). Physiologic measures did not change significantly in either group. Intervention participants had significant improvements in beliefs about the necessity of medications ($\beta = 0.87$ [0.27, 1.47]) concerns about the negative effects of medication ($\beta = -0.91$ [-1.35, -0.47]), and beliefs that medications are harmful ($\beta = -0.50$ [-0.89, -0.10]). In addition, medication use self-efficacy significantly improved in intervention participants ($\beta = 1.0$ [0.23, 1.76]).

Discussion: The Living Well program was implemented successfully by peer coaches working with adults with diabetes residing in high-needs communities. The combined strategies of storytelling and peer support resulted in improved medication adherence, medication beliefs, and medication use self-efficacy in adults with diabetes.

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Paper Session 15

4:15 PM-4:30 PM

BEHAVIORAL AUTOMATICITY MEDIATES THE ASSOCIATION BETWEEN EFFORTFUL CONTROL AND ADOLESCENT TYPE 1 DIABETES MANAGEMENT

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Daily management of type 1 diabetes requires frequent treatment-related behaviors that aid in regulating blood glucose levels (Chiang et al., 2018) and adolescents with type 1 diabetes experience significant challenges with following treatment recommendations (Farrell et al., 2004; Helgeson et al., 2010). Behaviors increasing effortful control have been repeatedly associated with improved adherence to treatment regimens and glycemic control (Berg et al., 2014; Lansing et al., 2016; Perez et al., 2016). However, research in adolescent type 1 diabetes management has yet to explore the intersection of habitual behavior and effortful control, despite evidence supporting the importance of behavioral automaticity for healthy living patterns (Galla & Duckworth, 2015) and the role of effortful control in the development of behavioral automaticity (Wood & Neal, 2007). The present study hypothesized that the association of high effortful control with better disease management would be mediated by behavioral automaticity for health behaviors in adolescents with type 1 diabetes. Participants consisted of adolescents diagnosed with type 1 diabetes ($n = 79$, M age = 15.1, 61% Female) who completed a multi-measure survey while attending a diabetes summer camp. Adolescents completed a modified Self-Report Behavioral Automaticity Index for Type 1 Diabetes (adapted from Gardner et al., 2012), the Self-Care Inventory, Revised (Weinger, et al., 2005), and the Effortful Control sub-scale of the Early Adolescent Temperament Questionnaire-Revised (Ellis & Rothbart, 2011). Data were analyzed using regression analysis. Results indicated a significant positive association between effortful control and disease management ($b = .394$, $t(74) = 3.48$, $p = .001$) and effortful control and behavioral automaticity ($b = .839$, $t(77) = 3.41$, $p = .001$). Additionally, a significant positive association was observed between automaticity and disease management ($b = .259$, $t(75) = 6.143$, $p < .001$). Moreover, the relationship between effortful control and disease management was no longer significant when controlling for automaticity ($b = .194$, $t(74) = 1.832$, $p = .071$), which is consistent with behavioral automaticity fully mediating the relationship between effortful control and disease management. These findings demonstrate the importance of targeting both habit formation and self-regulation systems to facilitate type 1 diabetes management and health outcomes in adolescence.

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MERITORIOUS AWARD WINNER

Paper Session 15

4:30 PM-4:45 PM

A DEMONSTRATION TO CAPTURE ADHERENCE TO FOOT SELF-CARE IN DIABETES: FINDINGS FROM ONGOING TRIALS TO PREVENT FOOT COMPLICATIONS

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Background: Diabetes increases the risk for lower extremity amputation (LEA), which is preceded by diabetic foot ulceration (DFU) in >80% of cases. Adherence to foot self-care lowers the risk for such complications. Currently, an unbiased measure that accurately captures adherence to foot self-care behaviors does not exist.

Objective: To evaluate the validity of a foot self-care demonstration designed to assess proficiency in basic foot self-care practices using baseline data from primary prevention (diabetic neuropathy, no DFU; n = 406) and secondary prevention (previous DFU; n = 234) trials.

Methods: Participants, through free recall, verbally explained and/or demonstrated 13 routine foot self-care practices. Each item was scored as 0 (not done), 1 (done but not proficient) or 2 (done and proficient), for a score ranging from 0-26. Participants were dichotomized into proficient (P) or non-proficient (NP) groups based on their foot self-care proficiency (indicated by a score > the median). Inter-rater reliability was evaluated using intra-class correlations (ICC), convergent validity examined with the validated foot self-care skills survey, discriminant validity with the EuroQol and exploratory factor analysis (EFA) was performed. P and NP groups were compared using Fisher's exact and Wilcoxon tests.

Results: The mean proficiency score for the combined study sample (n = 640) was 8.38 (SD=3.11) and the median was 8 (range 0-22). The inter-rater reliability was 0.86 (p < .0001). Spearman's correlation with foot self-care skills score was 0.26 (p < .0001) while correlation with EuroQol was -0.01 (p=0.77). EFA indicated three latent factors: 1) foot barrier, 2) inspecting feet and 3) preparatory check, that could potentially correspond to distinct subscales. There was a greater percentage of proficient individuals among participants with a history of DFU as compared to those with no history of DFU (51.28% v 37.78%, p < .0001). Duration of diabetes (years) in P and NP individuals was 17.89 and 15.75 (p=0.0049) respectively. Finally, there was a higher percent of NP individuals living alone (P: 37.3 v NP: 62.7, p=0.04).

Conclusions: Our findings show that the demonstration instrument is valid and avoids self-report bias. This method is ideal for evaluating foot self-care because of the different elements involved. A longer duration of diabetes, previous DFU and not living alone were associated with increased proficiency.

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Paper Session 16

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STRESSPROFFEN - AN APP BASED STRESS MANAGEMENT PROGRAM FOR PATIENTS WITH CANCER: SHORT TERM EFFICACY FINDINGS FROM AN RCT

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Background: Many cancer patients will experience distress. A number of in-person psychosocial stress management interventions exist for cancer patients, but these types of interventions are not always available options during active medical treatment, or for patients that reside far away from a cancer center. A multi-disciplinary research team has designed and developed *StressProffen*, an app-based cognitive behavioral stress management intervention for patients with cancer, and *StressProffen* has been pilot-tested by cancer survivors.

Aim: To examine short term effects of using *StressProffen* (compared with usual care), in a randomized controlled trial (RCT) for patients diagnosed with cancer.

Method: In an RCT, 135 cancer patients were followed for 3 months. Participants were randomized to either: 1) The *StressProffen* intervention (n=66), or 2) a control group (n=69) receiving usual care. The *StressProffen* app-based program contained a face-to-face introduction session and ten app-based modules with stress management strategies including educational information and a variety of exercises (e.g., diaphragmatic breathing and meditation). Participants received follow-up phone calls after 3 and 6 weeks. Outcome measures were completed at baseline and at 3-months post intervention start, and included The Perceived Stress Scale (stress), the Hospital Anxiety and Depression Scale (anxiety and depression), and SF-36 (Health Related Quality of Life; HRQoL).

Results: Participants were mainly women (82%), age range 20-78 years old (mean 51.8) and represented a wide variety of cancer diagnoses, but with a majority breast cancer (49%). Simple t-test change scores showed that compared with the control group, the *StressProffen* intervention group had significant decrease in stress (p = .022; mean diff (MD) -3.0; 95% Confidence Interval (CI) -5.6 to -0.4). There was also an increase in HRQoL for the *StressProffen* intervention group for most sub-factors, and significantly so for Role-Physical (p = .039; MD: 15.6; CI: 0.8 to 30.7), Social Functioning (p = .035; MD: 8.9; CI: 0.6 to 17.2), Role-Emotional (p = .049; MD 16.7; CI: 0.1 to 33.7), and Mental Health (p = .009; MD: 7.1; CI: 1.8 to 12.4). There were no significant changes in anxiety or depression at the 3 month assessment.

Conclusion: This study demonstrates that an app-based cognitive behavioral stress management intervention can contribute to decreased stress and improved well-being for patients diagnosed with cancer.

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Paper Session 16

3:45 PM-4:00 PM

MODELS OF TRAUMA, DEPRESSION AND SUICIDALITY IN
A SAFETY NET PRIMARY CARE SAMPLESamantha N. Mladen, M.S.¹, Allison Baylor Williams, M.S.¹, Sarah C. Griffin, MS, BASc², Paul B. Perrin, PhD¹, Bruce Rybarczyk, PhD¹¹Virginia Commonwealth University, Richmond, VA; ²Virginia Commonwealth University, Carrboro, NC

Background: Primary care is a vital component of the American healthcare system, particularly for patients with limited resources. However, there is little research on the interplay of trauma exposure, depression, and suicidality, particularly in high-risk primary care samples. The present study aimed to: 1) characterize the prevalence and nature of suicidality, depression, and trauma exposure in this sample; and 2) develop and test models of the relationships among suicidality, depression, and trauma exposure.

Methods: Patients ($n=207$) in a safety-net primary care clinic completed the Patient Health Questionnaire-9 (PHQ-9), Adverse Childhood Experiences Study (ACES) questionnaire, and Brief Trauma Questionnaire (BTQ). Participants (age $M=44.75$, $SD=11.62$), were 60% male, predominantly Black/African American (64%; 27% White/European-American, 9% Other), and overwhelmingly with low resources (69% reported an annual income $< \$5,000$, 98% an annual income $< \$30,000$).

Results: Half of patients reported at least four traumatic events ($m=3.86$ events; $SD=3.01$) childhood traumatic events and approximately 3 ($SD=2.09$) adult traumatic events. A majority of the sample (82.13%) reported clinically significant levels of depression and 43.5% endorsed suicidality. Trauma exposure exacerbated the relationship between depression and suicidality ($B = .01$, $\Delta R^2 = .02$, $p = .008$). Depression partially mediated the relationship between trauma exposure and suicidality (.04, 95% CI: [.02, .06]).

Discussion: These results call attention to the high prevalence of trauma exposure, depression, and suicidality in a high-risk primary care sample. They reveal a complex interplay between trauma, depression, and suicidality, whereby trauma exposure strengthens the link between depression and suicidality and depression partially mediates the relationship between trauma exposure and suicidality. These findings highlight the pervasiveness and complexity of suicidality in low-income primary care patients, underscore the importance of nuanced suicide assessment, and identify trauma and depression as potential treatment targets to reduce suicidality.

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Paper Session 16

4:00 PM-4:15 PM

ASSESSING THE MENTAL HEALTH IMPACT OF 13 REASONS WHY:
A NARRATIVE LITERATURE REVIEWBeth L. Hoffman, MPH¹, Jessica G. Burke, PhD¹, Riley B. Wolynn, n/a¹, Brian A. Primack, MD, PhD², Jane M. Liebschutz, MD, MPH, FACP¹, Jaime E. Sidani, PhD, MPH, CHES¹, Sansea L. Jacobson, MD¹, Elizabeth Miller, M.D., Ph.D.³¹University of Pittsburgh, Pittsburgh, PA; ²University of Arkansas, Fayetteville, AR; ³Children's hospital of Pittsburgh, Pittsburgh, PA

Introduction: In 2017, Netflix released Season 1 of *13 Reasons Why*, a controversial series focused on the suicide of its teenage protagonist. Given concerns about the risk for suicide contagion because of the show's graphic depiction of suicide, multiple researchers have sought to determine if there were associations between the release of the program and various mental health-related outcomes such as youth negative affect and suicide rates. However, there has yet to be a systematic and comprehensive synthesis of this literature. This review aims to fill that gap.

Methods: We conducted literature searches in Medline, Ovid PsychINFO, and EbscoHost Communications & Mass Media Complete in August 2019. Reference lists of articles found through database searches were searched to identify additional relevant articles. Selected studies had to be related to *13 Reasons Why* and examine quantitative or qualitative data to assess a mental health-related outcome. Studies were classified according to (1) participant factors, (2) study design, and (3) outcomes assessed.

Results: Fourteen articles met selection criteria. Eleven (79%) assessed outcomes primarily in youth and/or young adults. Two used time series analyses to assess any changes in suicide rates among youth aged 10–17 and 10–19 after the release. Five (36%) examined the association between the release and other trends, such as hospital admission rates for self-harm/suicidal ideation and Google searches for suicide-related terms. Six (43%) used surveys to investigate the association between viewing patterns and outcomes; of these studies, five were cross-sectional and one was longitudinal. Findings from these studies demonstrated that, compared to the general population, youth and young adults with a history of depression or suicidal ideation were more likely to view the program alone and report that watching it worsened their mood and/or increased their risk of suicide.

Conclusion: Current research suggests an association between exposure to the program and increases in youth suicide and suicidal behavior. This research also raises concerns that high-risk youth may be particularly susceptible. Given that the program remains popular, with the official Season 3 trailer having been viewed 8.6 million times by its August 2019 release date, continued research is needed to explore its effects on youth further.

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Paper Session 16

4:15 PM-4:30 PM

PEER SUPPORT BY TELEPHONE FOR HIGH RISK GROUPS AS A STRATEGY FOR SCALE-UP AND DISSEMINATION: GENERAL EVALUATION & LESSONS LEARNED

Megan S. Evans, MS¹, Edwin B. Fisher, PhD², Patrick Y. Tang, MPH³, Nivedita L. Bhushan, PhD, MA⁴, Dawn Dreyer Valovcin, MHSA⁵, Cherie Castellano, M.A. LPC⁶

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Peer support is associated with a variety of physical and mental health benefits. Beyond demonstrations of effectiveness, however, research is needed to identify ways in which peer support can be implemented in real world settings. One promising approach is through telephone peer support. Telephonic peer support services provided by Rutgers Health University Behavioral Health Care were evaluated. This organization serves a variety of high-risk groups including veterans, police, mothers of children with special needs, and child protection workers. The Reciprocal Peer Support Model—emphasizing four tasks: Connection & Pure Presence, Information Gathering & Risk Assessment, Case Management & Goal Setting, and Resilience Affirmation & Praise—guides the services provided. Evaluation included contact data from the years 2015-2016, interviews with peer supporters and callers of the programs, and selected case notes documenting interactions.

Over these two years, peer supporters made 64,786 contacts with 5,616 callers. The length of peer support relationships were determined by individual needs, with 22% lasting one month or less and 43% extending over one year. Callers reached out for various reasons, with 92% of cases reviewed receiving help with a psychosocial issue (i.e. interpersonal, mental health, workplace, traumatic incident) and an additional 62% receiving assistance with a basic needs issue (i.e. medical, housing, legal). Fifty-three percent received at least one referral. Voicemails accounted for 51% of contacts and were delivered in a way that emphasized the connection made and continued concern for the caller, thus representing substantive contact and not simply attempts to schedule it.

A variety of peer support benefits were identified, including accessing needed services, stress relief, normalization of clients' experiences, and reduced feelings of isolation. Clients also reported progress in a range of areas such as attending counseling, obtaining medical insurance for a child, and taking time off as a way to prevent job burnout. Diversity is a striking theme of these findings – diversity of caller needs, patterns of contact, types of support, and types of benefits. This diversity shows the flexibility of these services. Standing behind this flexibility, however, are standardized guidelines based on the Reciprocal Peer Support model as well as a robust IT platform that supports documentation and sharing among staff, creating continuity of 24/7 support.

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MERITORIOUS AWARD WINNER

Paper Session 16

4:30 PM-4:45 PM

ARE VIRTUAL STRESSORS A REALITY?

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Virtual reality affords new opportunities for eliciting psychophysiological stress responses in controlled environments. In the present study we compared the effects of a traditional Trier Social Stress Task (TSST; Kirschbaum, et al., 1993), with two versions of a virtual-TSST developed by our lab. Participants performed a five-minute speech and five minutes of oral arithmetic in one of three confederate audience conditions: (1) 2-confederates in-lab, (2) 2-virtual confederates, and (3) 200-virtual confederates. Virtual confederates were pre-recorded using a Vuze 4K 3D 360° Spherical VR Camera. Virtual audiences were presented to participants with an Oculus Rift headset. All confederates provided scripted non-positive feedback to enhance perceptions of evaluative threat in each condition. We measured psychological responses using the Stress and Arousal Checklist, in addition to physiological reactivity including salivary cortisol, systolic blood pressure (SBP) and diastolic blood pressure (DBP). A one-way ANOVA revealed that participant responses on the stress subscale of the Stress and Arousal Checklist did not differ between conditions ($p > .05$). However, there was a difference in reports of arousal ($p < .05$). Post-hoc Tukey LSD comparison revealed that participants in the 2-virtual confederates condition had lower arousal scores than those in the 200-virtual confederates condition. Mixed-model analyses were used to examine within subject physiological responses and compare them between the three conditions. There was a main effect of time on SBP and DBP such that values during the speech and math tasks, and the first recovery period were significantly higher than during baseline ($ps < .01$). Also, there was a main effect of time on cortisol such that values at 10 minutes post task were significantly higher than baseline ($p < .05$). There were no differences between conditions for physiological responses at any point ($p > .05$). These results suggest that the virtual-TSST protocols developed by our lab elicit psychophysiological stress responses similar to those elicited by the traditional, in-person, TSST. Use of virtual reality in the development of further stressor tasks may create more ecologically valid tasks for the participants recruited, as well as the benefit of being portable technology which can be used in situations where access to lab space may not be available.

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Paper Session 17

3:30 PM-3:45 PM

RELATIONSHIPS BETWEEN PTSD SYMPTOMS AND DISINHIBITED EATING AND WEIGHT-RELATED CONCERNS: THE ROLE OF EXPERIENTIAL AVOIDANCE

Jennalee S. Wooldridge, PhD¹, Cara Dochat, M.S.², Niloofar Afari, PhD³, Herbert Matthew, PhD⁴¹University of California San Diego/VA San Diego, San Diego, CA; ²San Diego State University/University of California San Diego Joint Doctoral Program in Clinical Psychology, San Diego, CA; ³VA Center of Excellence for Stress and Mental Health and Department of Psychiatry UC San Diego, San Diego, CA; ⁴VA San Diego Healthcare System, San Diego, CA

Disinhibited eating and post-traumatic stress-disorder (PTSD) commonly co-occur. Avoidance, a key feature of PTSD, is one potential mechanism that may explain this relationship. However, little is known about mechanisms relating PTSD and disinhibited eating, and much less has been examined in men relative to women. Avoidance, which is a key feature of PTSD and related to lower quality of life and greater psychopathology generally, is one candidate mechanism. Thus, the purpose of the current analysis was to: 1) examine the associations among PTSD symptoms and measures of disinhibited eating and weight-related concerns, including obesity-related quality of life and weight-related stigma, in a primarily male sample of veterans with overweight or obesity; and 2) determine whether experiential avoidance, a tendency to avoid unpleasant thoughts, feelings, and physical sensations, even when maladaptive, helps explain the relationship among PTSD symptoms and disinhibited eating and weight-related concerns. Participants were 89 veterans (76% male) with overweight or obesity enrolling in an intervention study to address eating and weight concerns. On average, participants were 57.2 years old ($SD = 10.0$) with a BMI of 37.4 ($SD = 7.3$). Bivariate correlations were used to examine relationships among PTSD symptoms (PTSD Checklist-Civilian; PCL-C), disinhibited eating symptoms (Binge Eating Severity Scale; BES), obesity-related quality of life (Obesity-Related Well-Being Questionnaire; ORWELL), weight-related stigma (Weight Self-Stigma Questionnaire; WSSQ), and experiential avoidance (Acceptance and Action Questionnaire II; AAQ-II). Separate linear regressions were used to examine relationships between PTSD symptoms with disinhibited eating symptoms, obesity-related quality of life, and weight-related stigma, respectively. Scores on the PCL-C, BES, ORWELL, WSSQ, and AAQ-II were all significantly correlated (p 's: $< .001 - .01$). Linear regression analyses indicated that higher PCL-C scores were related to higher scores on the BES, ORWELL, and WSSQ after controlling for confounding variables including BMI and ethnicity. Effect sizes were in the small-medium (WSSQ) and medium-large (BES, ORWELL) ranges. Further, AAQ-II fully mediated both the relationship between PCL-C and ORWELL ($B = .48$, $SE = .19$, 95% CI: .05, .82), and WSSQ ($B = .28$, $SE = .05$, 95% CI: .19, .38), but did not mediate the relationship between PCL-C and BES. In this sample, PTSD symptoms were associated with greater disinhibited eating symptoms, poorer obesity-related quality of life, and greater weight-related stigma. These findings suggest experiential avoidance should be considered in future interventions addressing PTSD and disinhibited eating and weight concerns in men and women. Longitudinal research is needed to better understand these relationships over time.

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CITATION AWARD WINNER

Paper Session 17

3:45 PM-4:00 PM

ASSOCIATION BETWEEN DECLINING INPATIENT PSYCHIATRY BEDS AND RISK FOR SUICIDE AMONG VETERANS

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Background: Suicide rates among Veterans have increased despite investment in mental health services in the Veterans Health Administration (VHA). We sought to examine the extent to which veteran-level characteristics, inpatient psychiatric beds, and community spending is associated with risk of death by suicide.

Methods: Veterans seen at a VHA primary care clinic between 1/1/2003 and 12/31/2016 were included. Patient data from the VA Corporate Data Warehouse were merged with cause of death data from the National Death Index Suicide registry. Other data sources were: the VHA Support Service Center (total VHA inpatient psychiatric beds and occupancy rates), Area Health Resources Files (civilian inpatient psychiatric beds and occupancy rates), and State Mental Health Agency (county-level data on mental health spending). Veteran-level analysis modeled the outcome as a binary suicide yes/no with a logit link. Relationships between veteran characteristics and suicide were tested using logistic regression. Facility-level analyses were conducted using a GLMM with a random intercept for parent station, and modeled the number of suicides per quarter with a Poisson distribution and log-link. Bed availability was categorized into quintiles, from lowest occupancy (highest availability) to highest occupancy (lowest availability).

Results: Of the 10,119,845 Veterans identified, 26,105 died by suicide during the study period. Compared to veterans aged 18-34 y, those aged 35-44, 45-54, and 55-64 y had increased odds of suicide ($OR = 1.14, 1.45, 1.25$, respectively), while veterans 65-74 had decreased odds of suicide ($OR = .76$). Higher odds of suicide were seen in male compared to female veterans ($OR = 2.9$), unmarried compared to married veterans ($OR = 1.84$), and veterans living in rural compared to urban areas ($OR = 1.2$). Black Veterans had lower odds of suicide ($OR = 0.26$) compared to Whites. Veterans diagnosed with bipolar disorder, major depressive disorder, schizophrenia, PTSD, and substance use disorder had 1.69, 1.50, 1.43, 1.63, and 1.44-times greater odds of suicide, respectively, compared to veterans without those diagnoses. Lower rates of suicide were observed for each additional 25 psychiatric beds/100,000 population ($RR = 0.87$) and each additional \$50 spent on mental health per capita ($RR = 0.97$). Rural VHA hospitals had greater relative risk of suicides than urban hospitals ($RR = 1.09$). Compared to VHAs in the lowest quintile of occupancy, those in the highest quintile had a 1.14 greater risk of suicide. OR s and RR s are significant at $\alpha = 0.05$.

Conclusions: Our novel findings are that lack of mental health bed availability is associated with a higher risk of suicide while greater community mental health investment is protective. Future work should clarify optimal levels of bed availability and mental health spending to increase the efficiency of allocating resources in the VHA and the community.

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Paper Session 17

4:00 PM-4:15 PM

A MATTER OF LIFE AND DEATH AFTER WAR: HOW THE VA CAN HELP PREVENT VETERAN SUICIDES

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While suicide is a complex phenomenon that widely affects individuals from all walks of life, veterans are a particularly vulnerable population due to veteran-specific risks. These risks are the frequency, length, and danger of deployments; exposure to extreme stress; physical/sexual assault while in the service; and service-related injury.

To date, veteran-specific risks are inextricable occupational hazards, so the U.S. Department of Veterans Affairs (VA) is in a unique position to aid veterans in suicide prevention. The VA has different programs that aim to address veteran mental health issues, varying across states. While an evaluation of specific programs are usually conducted to justify spending, it will be informative to study the broad effects of public health expenditure from a macro-perspective.

This paper asks: will scaling resources help the VA reduce veteran suicides? If so, what is the optimal spending level? If not, what are the alternative policy actions that can address this issue? Through a panel estimation, this paper studies the relationship between veteran suicide by firearms and total VA expenditures and VA health expenditures, separately. Along with controls for socioeconomic characteristics of the veteran population, regional heterogeneity is accounted for through temporal interactions between 2005 and 2016.

This paper finds that there is no statistically significant relationship between expenditures and veteran suicides. Simply increasing funding at this point may be inefficient and ineffective in preventing veteran suicides. Alternatively, the paper finds that increases in veterans' VA healthcare utilization, income, and educational attainment reduce the rate of veteran suicides. For a percentage point increase in VA healthcare utilization, the rate of suicide by firearms decreases by 0.06 percentage points.

As a robustness check, the paper finds no potential policy endogeneity; thus the significant negative relationship between VA healthcare utilization and veteran suicides indicate that improving utilization rates can potentially prevent more suicides. This can be done through more active outreach and communication of available VA programs to veterans. However, it is important to note that, while statistically significant, the effect of utilization is still quite small. It would be imperative to examine the effectiveness of each program through evaluations, which will help the VA apply best practices to prevent veteran suicides.

The findings suggest that reducing veteran suicides will require more than just increased funding. There is already a promising mechanism in place for suicide prevention - what matters now is how the VA can fully harness this mechanism.

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Paper Session 17

4:15 PM-4:30 PM

ROLE OF SLEEP APNEA IN THE RELATIONSHIP BETWEEN PTSD AND ADVERSE CARDIOVASCULAR EVENTS IN A NATIONAL VETERANS AFFAIRS SAMPLE

Lizabeth Goldstein, PhD¹, Shira Maguen, PhD², Daniel Bertenthal, MPH³, Beth Cohen, MD⁴, Ali El-Solh, MD, MPH⁵, Thomas C. Neylan, MD⁴¹San Francisco VA Healthcare System, San Francisco, CA; ²UCSF and SFVAMC, San Francisco, CA; ³San Francisco VA Health Care System, San Francisco, CA; ⁴University of California, San Francisco, San Francisco, CA; ⁵VA Western New York, BUFFALO, NY

The prevalence rate of posttraumatic stress disorder (PTSD) among veterans is estimated to be up to 20%. Previous research has shown that PTSD is associated with increased risk of several negative health outcomes, including adverse cardiovascular events. Obstructive sleep apnea (OSA) is more prevalent among Veterans with PTSD compared to the general US population; two recent studies found that among Veterans seeking PTSD treatment in Veterans Health Administration (VHA) PTSD clinics, 70-73% screened high likelihood for OSA. OSA itself is associated with numerous medical conditions, including hypertension, coronary artery disease, heart failure, and stroke. We sought to evaluate the extent to which sleep apnea may account for the relationship observed between mental health (MH) disorders, particularly PTSD, and negative cardiovascular outcomes. Using national VHA databases, we extracted data for Veterans seen at least twice over a 10-year period in VHA. Veterans were categorized by mental health status (PTSD, MH diagnosis other than PTSD, or no MH diagnosis), sleep apnea status (OSA or not), and incidence of adverse cardiac event. The sample consisted of 5.6 million Veterans, with average age of 61-years-old ($SD = 14$), and was 91% male and 78% Caucasian. Nineteen percent of the sample had a PTSD diagnosis, and 25 percent had another mental health diagnosis. Eighteen percent of the sample had an OSA diagnosis. After adjustment for age, compared with Veterans without MH or OSA diagnosis, Veterans with PTSD and OSA were much more likely to experience an adverse cardiovascular event over the studied decade (adjusted RR, 2.59; 95% CI, 2.58-2.61). This risk exceeded that of a PTSD diagnosis alone (adjusted RR, 1.63; 95% CI, 1.62-1.64) or OSA diagnosis alone (adjusted RR, 1.96; 95% CI 1.95-1.97). A similar pattern was observed for MH disorders other than PTSD and OSA: among those with both a MH diagnosis and OSA, the adjusted RR was 2.86 (95% CI, 2.84-2.87), and among those with a MH diagnosis alone, the adjusted RR was 1.74 (95% CI, 1.73-1.74). Results accounted for the interactions between sleep apnea and both other MH diagnosis and PTSD. In sum, the combination of OSA and MH diagnosis (PTSD or other) confers a substantial risk for adverse cardiovascular events. More detailed findings with results broken out by specific adverse cardiac outcome (identified by ICD-10 diagnosis codes) will be presented. We will review implications of this work and suggest next steps to improve the detection and treatment of OSA among veterans with PTSD and other MH disorders.

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Paper Session 17

4:30 PM-4:45 PM

EFFECTS OF SOCIAL NETWORK CHARACTERISTICS ON MENTAL HEALTH OUTCOMES AMONG ARMY RESERVE AND NATIONAL GUARD SOLDIERS

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Background: Previous civilian research has demonstrated that the social environment can affect one's own mental health through protective factors like greater closeness to peers as well as risk factors like exposure to peers' own depressive or self-injurious behaviors. Recent military work has examined the effects of peers on soldiers' substance use, but the literature is limited in its discussion of social-ecological risk and protective factors for soldier mental health outcomes. To address this gap, the current study examines associations between social network characteristics and current severity of soldiers' mental health symptoms.

Methods: Data are from Operation: SAFETY (Soldiers And Families Excelling Through the Years), a study of health of Army Reserve and National Guard (R/NG) soldiers and their partners. Analyses were based on 441 R/NG soldiers and 2,637 social ties. Outcomes of interest were generalized anxiety severity, overall and cluster-specific PTSD severity, and depression severity. Social network characteristics included closeness to ties, time spent with ties, ties' substance use, and ties' military involvement. Negative binomial regression models were used to examine relationships between social network characteristics and each soldier mental health outcome.

Findings: Greater numbers of illicit drug-using ties in the social network were associated with greater severity of anxiety as well as PTSD symptoms related to avoidance and hyperarousal. Regarding social ties' military service, greater numbers of ties who were in a soldier's unit were associated with decreased depression symptom severity. For ever-deployed soldiers, greater numbers of military ties were associated with risk for greater anxiety severity, avoidance-related PTSD symptoms, and depression severity, while greater numbers of unit member ties were protective of all three outcomes.

Conclusions: Social tie illicit drug use was associated with severity of multiple anxiety-related mental health outcomes, which may indicate soldiers' self-medication through use with social networks. Unit members appeared to serve protective roles against soldiers' negative mental health outcomes, reflecting the fact that unit members may better understand the specific military experience of the soldier and serve as a resource of support. Findings contribute to the understanding of social-ecological risk and protective factors that influence mental health outcomes in the military.

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CITATION AWARD WINNER

Paper Session 18

3:30 PM-3:45 PM

FAMILIAS SALUDABLES - A FAMILY-BASED APPROACH TO CHILDHOOD OBESITY PREVENTION: LESSONS FROM THE FIELD

Mara Bird, PhD¹, Diana Aguirre, MPH, CHES², Olga Korosteleva, Ph. D.³, Elisa Nicholas, MD, MSPH⁴, Melawhy L. Garcia, MPH, PhD⁵

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Background: Endemic to the current US population, obesity disparately affects Hispanic children and their families, especially children of middle income families whose parents have low levels of educational attainment. A family-based approach allows parents and their children to learn together to develop sustainable behaviors for a healthy life.

Methods: The study uses a randomized control design (2 group) with 5 repeated measurement points (pre, post, 3, 6, and 9-month). Survey data is self-report using bilingual paper instruments. Participants also provide anthropometric measures (e.g. height, weight, BMI) using portable Tanita SC portable bioimpedance scales and stadiometers. Various methods of recruitment are being tested: calling patients identified via Electronic Health Record diagnoses, direct physician referral, and public recruitment (in-person, flyers, and inter-agency sharing). Settings for the conditions include: clinics, health department, library, park-based community centers and churches. The 7-session intervention is based on three evidence-based interventions: KidShape 2.0, SPARK K-2 and 3-5 grade physical activity curriculum, and Sanos y Fuertes: Healthy and Strong. Intervention sessions are implemented in 2-hour segments once or twice per week by bilingual trained staff.

Results: A total of 69 child-parent dyads have enrolled in the intervention and 56 child-parent dyads in the control condition. Preliminary results show BMI percentile maintenance or improvement for the intervention, and maintenance or worsening for the control. There are significant reductions in sedentary time and increases in activity for children in the intervention. There are no statistically significant differences for fruit, vegetable, simple carbohydrate nor sugar-sweetened beverage consumption, or in time spent active as a family.

Discussion: Multifactorial reasons for rates of participation and attrition will be discussed overall and by sites and by group size. Finally suggested best practices will be presented to guide similar research.

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Paper Session 18

3:45 PM-4:00 PM

MEAL PLANNING AS AN IMPORTANT BEHAVIOR CHANGE STRATEGY FOR DIETARY INTAKE AND OBESITY AMONG FAMILIES OF SCHOOL-AGE CHILDREN

Jayne A. Fulkerson, PhD¹, Melissa L. Horning, PhD, RN, PHN¹, Jennifer A. Linde, PhD¹, Sarah Friend, MPH, RD¹¹University of Minnesota, Minneapolis, MN

Purpose: Meal planning is thought to contribute to dietary quality and weight management. However, meal planning is often measured retrospectively (e.g., survey of typical week) and little is known about whether the proportion of meals planned in advance is associated with demographic, household, and mealtime characteristics or dietary intake and weight among families with school-age children. The present study aimed to assess these relationships using real-time measurements of whether meals were planned in advance to inform behavior change intervention research.

Methods: The present study analyzed NU-HOME 2017/2018 baseline data (n=105 families). Ecological momentary assessment surveys were randomly sent to parents on seven evenings over two-weeks to assess if the evening meal was made at home and if it was planned in advance. The proportion of meals planned in advance was calculated across the two-weeks using a cut-point of $\leq 50\%$ vs. $> 50\%$. Parent psychosocial surveys assessed demographic, household and mealtime characteristics and parent fruit/vegetable (FV) intake. Research staff conducted dietary recall interviews to assess child FV intake and measured child and parent height and weight (body mass index (BMI)). Chi-square/Fisher's exact/T-tests were used to examine associations of the proportion of meals planned in advance with parent and child outcomes.

Results: Compared to those planning $\leq 50\%$ of meals in advance, those planning $> 50\%$ were significantly more likely to be food secure, college educated and have higher mean scores for child's food fussiness, family meal routines, self-efficacy for preparing healthful meals and lower mean family chaos scores (p 's < 0.05). Those planning $> 50\%$ meals in advance reported significantly greater frequency of their child's plate half filled with FV and have higher mean parent daily FV intake (p 's < 0.05) than those who planned $\leq 50\%$ of meals in advance. No associations were found between the proportion of meals planned in advance and the number of children in the household, parent age, job status, work schedules, child cooking skills, child FV intake or parent/child BMI/BMI z-scores.

Conclusions: Findings suggest behavior change programs intending to assist parents with meal planning may promote healthful dietary intake but may need special focus on augmenting mealtime routines and self-efficacy while addressing food insecurity and family chaos.

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Paper Session 18

4:00 PM-4:15 PM

PATTERNS OF EATING DISORDER PATHOLOGY AND PSYCHOPATHOLOGY IN RELATION TO WEIGHT AMONG CHILDREN IN FAMILY-BASED TREATMENT

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Background: Eating disorder (ED) attitudes and behavior and general psychopathology are commonly reported among children with overweight/obesity (OW/OB), yet few studies have examined their compounded impact on weight change during treatment. The current study characterized patterns of ED attitudes and behavior and general psychopathology in children with OW/OB and examined their impact on weight change following family-based obesity treatment (FBT).

Method: Children (n=172) with OW/OB participated in 4 months of FBT. Child-reported ED attitudes (i.e., shape concern, weight concern), ED behavior (i.e., loss of control [LOC] eating), general psychopathology (i.e., anxiety, depression), and child percent overweight (%OW) were assessed at baseline and month 4. Finite normal mixture modelling identified latent classes of ED attitudes/behaviors and general psychopathology at baseline. Multiple linear regression examined whether class membership correlated with changes in %OW from baseline to month 4, controlling for child age, sex, race, ethnicity, baseline %OW, and family socioeconomic status.

Results: Results supported a three-class structure: high general psychopathology and ED attitudes only (HIGH) [i.e., high shape and weight concerns, high anxiety and depression, low LOC, n=70]; high general psychopathology plus high ED attitudes and behaviors (HIGH+LOC) [i.e., high shape and weight concerns, high anxiety and depression, high LOC, n=59]; and low general psychopathology and ED attitudes and behaviors (LOW) [i.e., low shape and weight concerns, low anxiety and depression, low LOC, n=43]. All groups demonstrated clinically significant weight loss (defined as greater than a 9-unit change in %OW) from baseline to month 4, but there were group differences in change in %OW during FBT, such that the HIGH+LOC group demonstrated significantly less weight change from baseline to 4 months (-12.2, SE=1.0) compared to the LOW group (-16.1, SE=1.2, $p=.04$). No other significant group differences were observed.

Conclusions: FBT was robust to these forms of pathology, as across groups, children demonstrated clinically significant change in %OW following FBT. The magnitude of clinically significant weight change, however, may vary depending on patterns of pathology. Future research is needed to develop tailored treatment strategies to address the needs of children with concurrent ED attitudes and behaviors and general psychopathology.

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Paper Session 18

4:15 PM-4:30 PM

STUDY DESIGNS INFLUENCE CONCLUSION FOR MEDIATED EFFECTS OF FOOD INSECURITY ON WEIGHT-RELATED PARENTING PRACTICES AND CHILD BMI

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Background: Paradoxically, children may be at higher risk for obesity when families experience food insecurity. One mechanism that could explain the link is use of controlling parental feeding practices (e.g., restriction, pressure to eat, demandingness). However, studies have found mixed results, possibly due to study design: using cross-sectional data to test mediational models. This study compares cross-sectional versus longitudinal models testing maternal concern for child weight and two feeding practices (restriction, pressure to eat) as mediators of the association between food insecurity and child body mass index (BMI).

Methods: Data came from a longitudinal study of mother-child pairs from southern California (n=202) with follow-up data collection every 6 months across 3 years. Children were M=10.12 (range 8-12) years at baseline, 67% Hispanic, and 51% female; mothers were M=41.24 years, and 59% had a college education or higher. Variables used were: household food insecurity (Six-item Short Form Food Security Survey Module - modified); parental food restriction, pressure to eat, and concern with child weight (Child Feeding Questionnaire); and child BMI (stadiometer & scale). Cross-sectional and longitudinal (i.e., baseline, 12 months, and 30 months) mediational models with multiple imputation were conducted in MPlus, controlling for child age and gender.

Results: Greater parental concern with child weight mediated the association between greater food insecurity and higher child BMI in cross-sectional models (indirect effect=.115, $p < .01$) but not longitudinal models (indirect effect=.000, $p = .960$). Higher food insecurity and greater restriction and greater pressure to eat were independently associated with child BMI in cross-sectional models (Brestriction=.23, $p < .01$, Bfood insecurity=.20, $p < .01$; Bpressure=-.39, $p < .01$, Bfood insecurity=.24, $p < .01$), but parental feeding practices were not significant mediators in cross-sectional or longitudinal models.

Conclusion: Cross-sectional models indicated that the link between food insecurity and higher child BMI is mediated by higher parental concern for child weight, and that parental restriction and pressure to eat are associated with child BMI. However, longitudinal models did not indicate significant associations or mediation. Mixed findings from previous research may be due to cross-sectional statistical mediational models rather than effects of substantive differences in parenting over time.

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Paper Session 18

4:30 PM-4:45 PM

INVESTIGATING THE RELATIONSHIP BETWEEN PARENTAL WEIGHT STIGMA AND PARENTAL FEEDING PRACTICES

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Background: Past research has demonstrated a link between weight stigma (i.e., prejudicial attitudes or discriminatory behavior targeted at individuals who carry excess weight) and an individual's own weight-related behaviors and outcomes, but no study has examined how parental levels of weight stigma may affect weight-related parenting practices. The primary objective of this study was to examine the cross-sectional associations between parental levels of weight-based stigmatization and weight-related feeding practices.

Methods: A national sample of participants (N = 406) were recruited through Amazon's M-Turk crowdsourcing marketplace who had at least one child aged 5-10 and perceived themselves to be overweight or obese. Parental weight stigma was assessed using the Stigmatizing Situations Inventory and Weight Bias Internalization Scale. Restrictive feeding practices were measured using subscales from the Comprehensive Feeding Practices Questionnaire. Explicit parental modeling of eating behaviors were assessed using subscales from the Parental Modeling of Eating Behaviors Scale. Several exploratory variables (of note, parental concern about child weight) were also collected. Hierarchical linear regression was used to determine the extent to which parental weight stigma explained variance in feeding practices after adjusting for relevant covariates. *A priori* exploratory mediation analyses were tested within path models.

Results: Parent-reported weight stigma experiences (R^2 change = .076, $\beta = .293$, $p < .001$) and weight bias internalization (R^2 change = .013, $\beta = .128$, $p = .016$) significantly predicted restriction for weight scores. In contrast, only weight bias internalization significantly predicted restriction for health behaviors (R^2 change = .019, $\beta = .156$, $p = .006$). Weight stigma experiences were significantly associated with verbal modeling behaviors (R^2 change = .021, $\beta = .154$, $p = .005$). In exploratory analysis, concern about child weight significantly mediated the relationship between weight stigma, restrictive feeding practices, and verbal modeling.

Conclusions: Parental weight stigma was found to significantly predict restrictive feeding practices and verbal modeling of healthy eating behaviors. Furthermore, these relationships may be mediated by parental concern about child weight. These findings represent an important first step in understanding the intergenerational effects of weight stigma on weight-related parenting behaviors.

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Paper Session 19

3:30 PM-3:45 PM

QUALITY OF LIFE THERAPY FOR PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS: TREATMENT ENGAGEMENT AND ACCEPTABILITY

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Background: Implantable cardioverter defibrillators (ICDs) save lives, but can also induce psychological distress among patients. Positive psychological constructs, including quality of life (QOL), are associated with improved outcomes among cardiac patients.

Methods: In this small randomized controlled NHLBI-funded study, ICD patients with elevated depression or anxiety symptoms were randomized to a 12-week positive psychology intervention (Quality of Life Therapy, QOLT; n=11) or an attention-matched control (Heart Healthy Education, HHE; n=10). At baseline and end-of-treatment, participants were administered the Quality of Life Inventory (QOLI) with 16 domains (e.g., health, family) to guide QOLT treatment targets as well as assess QOL outcomes. Participants and interventionists rated each session for engagement. Interventionists and the principal investigator (PI) audited 20% of sessions for treatment fidelity. At end-of-treatment, participants completed a Program Evaluation to assess intervention acceptability.

Results: The majority of participants attended all 12 sessions (15/21; 71%), with similar rates of complete attendance between QOLT participants (73%) and HHE participants (70%). Thirty-six percent of sessions were conducted by telephone (78/215 sessions), with a greater proportion of telephone sessions among HHE participants (48%) than QOLT participants (23%). Participants were highly engaged in treatment ($M=4.7/5$, $SD=0.3$), with good agreement between participants and interventionists ($ps < .001$). Likewise, treatment fidelity was high to the treatment protocols ($M=4.7/5$, $SD=0.5$), with excellent agreement between interventionists and PI ($ps < .001$). Eight QOLT and 10 HHE participants completed the Program Evaluation. Nearly all QOLT participants (88%) reported improved mental health whereas HHE participants (90%) reported improved physical health ($p=.001$). Improvements in overall QOL were reported among both groups, with greater improvements in QOLT participants ($d=1.02$) compared to HHE participants ($d=0.84$).

Conclusions: ICD patients found the positive psychology intervention to be an engaging and acceptable treatment for psychological distress. The majority of QOLT participants reported improvements in mental health. These pilot data support a larger-scale trial using QOLT among ICD patients to assess clinical outcomes and potential mechanisms underlying the relationship between positive psychological constructs and cardiovascular health.

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Paper Session 19

3:45 PM-4:00 PM

EXPERIENCES OF YOUNG WOMEN WITH CHRONIC DISEASE: HEART DISEASE AND BREAST CANCER

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Background: Young women's experiences with chronic diseases, especially the stereotypically "men's" diseases of the heart, are understudied. Young women's challenges might differ for chronic diseases less versus more commonly associated with women, for example, heart disease vs. breast cancer. Similarities across young women with chronic disease also might exist, given that chronic diseases are more normative in older age. Intersections of age, gender, and the experience of chronic disease require greater attention; accordingly, this qualitative study examined the narratives of young women with one of two diseases, heart disease or breast cancer, among the leading causes of mortality in women.

Methods: Semi-structured interviews were conducted with 20 women ($M_{age} = 45.2$, $SD = 8.6$; $n = 10$ with each disease). Inductive, thematic analysis was conducted; iterative coding and revision of candidate themes occurred through consensus.

Results: Four primary themes emerged: Resilience and Coping, Identity Integration, Implications of Chronic Illness Social Norms, and Personal Account of Lived Experience. Generally, diagnoses were a surprise to women. Challenges occurred when medical providers held a representativeness heuristic that heart disease and cancer occur in older women. Women were distressed when limited public knowledge resulted in unsupportive behaviors. Participants often were at the height of building careers, intimate relationships, and families, which were threatened by disease-related functional problems. Women typically used a combination of cognitive and behavioral coping strategies to integrate the illness experience with their sense of self. Relationships strengthened or changed; many found new social roles in service of others with chronic illness. Prominent experiences more salient to women with heart disease included: worsened self-image from disability, negative impact of invisibility (e.g., "can't tell from looking at me that I'm sick"), persisting isolation, and lack of professional support. Barriers reported by younger women with heart disease may reflect gender biases (e.g., atypical symptoms attributed to anxiety; no diagnosis with clear arteries).

Conclusion: Greater public awareness of heart disease and cancer in younger women, alongside structural support and connection with similarly challenged peers, are warranted. As advocacy for breast cancer awareness and action has increased over the past decades, so too are similar efforts for younger women with heart disease vitally needed.

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Paper Session 19

4:00 PM-4:15 PM

PSYCHOLOGICAL DISTRESS AND ITS INCREASE PREDICT DETERIORATION IN MEDICAL ADHERENCE OVER 9 MONTHS IN HEART PATIENTS

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Background: Psychological distress, including depression, anxiety, and perceived stress, is not only prevalent but also associated with poor clinical outcomes among patients with coronary heart disease (CHD). Medical nonadherence appears to be a potential pathway linking psychological distress and poor outcomes. This study aimed to examine whether different forms of psychological distress and its increase over time would predict greater deterioration in CHD patients' adherence to medication and overall treatment recommendations over 9 months.

Methods: Participants were 165 CHD patients (mean age = 63 [SD=8.65]) recruited from a community outpatient heart wellness program. They completed validated measures of psychological distress (depression, anxiety, and perceived stress), medication adherence, and adherence to specific medical recommendations (e.g., exercise, healthy eating, weight loss, stress reduction, etc.). Hierarchical multiple regression analyses were conducted to examine whether each distress variable and its increase over time would predict deterioration of patients' adherence to medication and treatment recommendations at 9 months. Given their correlations, depression, anxiety, and perceived stress were tested in separate models. All models were adjusted for respective adherence measure at baseline, age, gender, marital status, education, BMI, months in program, hypertension, and diabetes.

Results: For medication adherence, depression ($\beta = .15, p = .024$) and its increase ($\beta = .20, p = .003$) significantly predicted greater deterioration in medication adherence at 9 months, after adjusting for baseline adherence ($\beta s = .56$ to $.61, ps < .001$) and other covariates. Anxiety ($\beta = .18, p = .011$) and its increase ($\beta = .17, p = .016$) also predicted more deterioration in medication adherence at 9 months. However, baseline stress ($\beta = .10, p = .168$) and its change ($\beta = .05, p = .463$) were not significant predictors. For adherence to specific recommendations, both baseline depression ($\beta = -.20, p = .010$) and its increase ($\beta = -.15, p = .035$), baseline anxiety ($\beta = -.25, p = .001$) and its increase ($\beta = -.17, p = .018$), and baseline stress ($\beta = -.29, p < .001$) and its increase ($\beta = -.23, p = .002$), predicted greater deterioration in adherence to specific recommendations at 9 months, after adjusting for baseline adherence ($\beta s = .46$ to $.51, ps < .001$) and other covariates.

Conclusions: Both baseline psychological distress and its increase over time independently predicted greater deterioration in medical adherence over 9 months among CHD patients. The study demonstrated the importance of continuous monitoring of different forms of psychological distress among CHD patients. Behavioral interventions to reduce psychological distress may be promising for improving patients' medical adherence over time.

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Paper Session 19

4:15 PM-4:30 PM

CONTEXT MATTERS: EXPLORING INTERVENTION DOSE AND OUTCOMES IN A PALLIATIVE CARE INTERVENTION FOR PATIENTS WITH HEART FAILURE

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Background: A better understanding of perceived optimal intervention dose and dose experience is critical for early palliative care intervention development for the 6.5 million US adults living with advanced heart failure (HF). While previous palliative care intervention studies often reported improved patient QoL and resource use and lowered symptom burden, intervention designs, including dosing, vary widely. Moreover, less is known about participants' perspectives and experiences with intervention dose and its impact on outcomes.

Purpose: To explore ENABLE CHF-PC (Educate, Nurture, Advise Before Life Ends Comprehensive Heart Care for Patients and Caregivers; NCT02505425) participants' perspectives and experiences with dose attributes of a psychoeducational, multicomponent early palliative care intervention (an in-person outpatient palliative care consultation and 6 nurse-led, weekly psychoeducational telehealth sessions with monthly follow-up).

Methods: We conducted a one-on-one, semi-structured interviews qualitative study with ENABLE intervention participants. Perspectives were elicited on experiences with intervention dose attributes (amount, duration, frequency, and intensity), intervention content, general trial participation, and intervention impact on QoL and healthcare resource use. Interviews were transcribed verbatim and analyzed using constant comparative analysis.

Results: Analysis of 45 patient interviews generated 14 themes clustered around 3 categories: 1) impressions of the ENABLE CHF-PC intervention and dose attributes, 2) individual contexts, and 3) study outcomes. Dose attributes of duration, frequency, amount, intensity, timing, and delivery were frequently described, including the relationship on outcome change. While the intervention was well-received, participants varied on how much the intervention dose should be modified to influence outcome change. Participants also commonly described their study experience within a specific context. Dose attributes are filtered through 5 individual participant context (disease-related factors, family support, nurse coach relationship, logistical factors, emotions) prior to intervention initiation and during intervention delivery impacting individual outcome change related to the intervention experience. Participants also described overall study impact on their health-seeking behaviors, HF knowledge, provider communication, and non-healthcare relationships.

Conclusions: The intervention dose and experience, despite shared HF diagnosis, resonated differently with each participant. These differing perspectives of early palliative care intervention dose and design support the rationale of considering principles of precision medicine, adaptive interventions, and SMART trial design.

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Paper Session 19

4:30 PM-4:45 PM

EXPERIENTIAL AVOIDANCE PREDICTS POSITIVE MOOD IN CARDIOPULMONARY REHAB PATIENTS

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Introduction: Despite the well documented preventative health benefits related to completing a cardiopulmonary rehabilitation program (CVPR) following a cardiac or pulmonary event, adherence remains suboptimal. Many factors for poor adherence and non-completion have been identified, and depression appears to be an important barrier to participation. Experiential avoidance, defined as unproductive efforts to reduce aversive emotional experiences, has been implicated as a mechanism related to the development and maintenance of depression, yet has been poorly researched in chronic disease populations as a treatment target. The purpose of the present study was to examine the longitudinal daily relationships between experiential avoidance and negative and positive affect utilizing a mobile ecological momentary assessment (EMA) approach, and to assess the feasibility of utilizing mobile EMA with CVPR patients. We expected that experiential avoidance would be associated with higher negative mood and lower positive mood.

Methods: Forty-seven CVPR patients were recruited within their first six CVPR monitored exercise sessions. Participants were prompted twice daily in the afternoon and evening for 14 days on their personal, or loaner, mobile devices using the Personal Analytics Companion (PACO) app. Participants completed a brief questionnaire consisting of assessed momentary experiential avoidance (5 items), negative mood (6 items), and positive mood (2 items). Multilevel modeling (MLM) was utilized to examine within-person within-prompt relationships between EA and mood, and lagged analyses were utilized to examine the bidirectional day-to-day relationships between EA and mood.

Results: Participants responded to 80% of EMA prompts and on average completed the assessment within 13 minutes of receiving the prompt. MLM analyses indicated that EA was significantly related to positive and negative mood within time points, in the hypothesized direction. Fixed effects from lagged analyses showed that EA predicted next day positive mood ($b = -.18, p < .01$), but positive mood did not predict next day EA. Lagged relationships between EA and negative mood were not significant, however these findings may be related to a floor effect observed in the measurement of negative mood.

Discussion: Mobile EMA monitoring appears to be a feasible approach to data collection for CVPR patients. Longitudinal relationships suggest that EA may be an important functional target for increasing positive mood in CVPR patients, and may also have implications for mood related barriers to program adherence and completion.

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Paper Session 20

3:30 PM-3:45 PM

FATIGUE, AFFECT AND SEDENTARY BEHAVIOR AMONG BREAST CANCER SURVIVORS OVER TIME USING ECOLOGICAL MOMENTARY ASSESSMENTS

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Sedentary behavior (SB) has been increasingly recognized as a risk factor for chronic disease. Cancer survivors report large volumes of SB in a typical day. Fatigue is one of the most common and debilitating sequelae that survivors experience and it can lead to increased SB. The goal of the current study was to examine the longitudinal relationship between fatigue, affect and SB in a sample of breast cancer survivors who reported data in real-time using Ecological Momentary Assessment (EMA) ($n=22$, mean age 51.5, 54.5% White, 59.1% working full-time; mean 2.45 years post-diagnosis, 13.6% cancer Stage 0, 27.3% Stage 1, 22.7% Stage 2 and 22.7% Stage 3). SB was assessed via accelerometry (Actigraph) and participants responded daily to one fixed and four random prompts via smartphone for 7-day periods at baseline, 3, 6, 9 and 12 months. Using a series of autoregressive, cross-lagged models, we tested the associations between affect, fatigue and SB. At baseline, average objectively measured sedentary time was 4601.0 min/week ($SD=174.0$) and remained stable over time. Models estimate the potential changes in affect, fatigue and SB over time, as well as the cross-lagged effects (e.g., “Does how I feel right now predict SB 3 hours from now?” and “Does SB right now predict fatigue at the next prompt?”). Models controlled for employment type as well as treatment (chemotherapy, radiation). Standardized coefficients were estimated and allow for the comparison of the strength of effects. Although SB did not change over time, there were significant cross-lagged effects of affect, fatigue and SB. Models of fatigue and SB suggest a trend for the cross-lagged effects of fatigue on SB such that greater levels of fatigue were associated with greater SB over the next 3 hours ($\beta=.08, p=.09$). There was also a significant association between current SB and future fatigue with greater time spent sedentary associated with higher levels of subsequent fatigue ($\beta=.11, p=.03$). More positively valenced affect earlier in the day was negatively associated with SB later in the day ($\beta=-.22, p<.001$) and this effect was stronger than effects of SB on future affective response ($\beta=-.13, p=.01$). Reducing SB among cancer survivors is clinically relevant and EMA approaches are a viable approach to examining antecedents of SB so that appropriate interventions targeting can be offered and evaluated.

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Paper Session 20

3:45 PM-4:00 PM

SLEEP SCHEDULE VARIABILITY IS NOT ASSOCIATED WITH TREATMENT RESPONSE TO AN INTERNET-BASED CBT FOR INSOMNIA PROGRAM

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Objectives: Cognitive-behavioral therapy for insomnia (CBT-I) emphasizes maintaining consistent bedtimes and rising times, but evidence is mixed regarding whether variability in an individual's sleep schedule is related to treatment outcomes. This secondary analysis tested 2 research questions: 1) does an Internet-based CBT-I program reduce within-subject (WS) variability in sleep schedule, and 2) does WS variability in sleep schedule predict self-reported insomnia remission?

Methods: Participants (N=303) were randomized to receive either an Internet-based CBT-I program (SHUTi: Sleep Healthy Using the Internet) or Internet-based patient education (PE). Participants reported daily bed- and rising times on 10 online sleep diaries collected over 2 weeks at baseline (prior to randomization) and post-assessment (9 weeks post-baseline at conclusion of intervention). Participants completed the Insomnia Severity Index at post-assessment and a 6-month follow-up; scores < 8 indicated insomnia remission. A novel two-stage data analytic approach through the freeware program MIXWILD was used to first estimate the random effects of participant-level bed- and rising time WS variability and tested the effect of condition. Next, participants' random effects were used as predictors in a logistic regression predicting insomnia remission at the following time point, controlling for condition.

Results: There were no differences in WS variability for bed- or rising times at baseline between participants randomized to SHUTi versus PE ($\tau=-0.02$, $p=.88$ and $\tau=-0.01$, $p=.93$, respectively). At post-assessment, SHUTi participants reported about 30% less bedtime and 32% less rising time variability compared to PE ($\tau=-0.35$, $p=.03$; $\tau=-0.39$, $p=.01$). Beyond the effect of condition, there were no associations between participants' bed- or rising time WS variability and their likelihood of reporting insomnia remission at the following time point, either from baseline to post-assessment, or from post-assessment to 6-month follow-up ($ps > .84$).

Conclusions: Internet-delivered CBT-I increases consistency in users' daily bed- and rising times; however, more consistent sleep schedules were not related to achieving or maintaining insomnia remission. These findings from a novel analytic framework question the clinical importance of common sleep hygiene rules as part of behavioral sleep insomnia treatments, and further research is warranted to identify mechanisms driving observed sleep improvements.

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Paper Session 20

4:00 PM-4:15 PM

HEALTH EFFECTS OF ABUSE HISTORY AND MODERATING EFFECT OF PARENTING STRESS FOR MOTHERS WITH MENTAL DISORDERS

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Background: Mothering in the context of having a mental disorder is an understudied phenomenon requiring attention so that service providers can be responsive to the needs of mothers and families. Women with mental disorders are more likely to have experienced abuse during childhood or adulthood than the general population, and the health consequences of abuse are well documented. However, there is less research on how having a history of abuse may affect the health of mothers with mental disorders, or whether parenting-related stressors exacerbate the health consequences of abuse for these mothers. The study examined relationships between experiencing multiple forms of abuse (physical, sexual, emotional/psychological) across the lifespan and health indicators among mothers receiving outpatient behavioral health services. We also explored parenting stress (low parenting self-efficacy, child-related hassles, and caregiving load), as a moderator of the relationship between abuse history and maternal health.

Method: The study conducted secondary analysis of baseline data from a randomized trial with 172 predominantly Hispanic mothers. Health indicators included anxiety, depression, obesity, fatigue, pain, sleep disturbance, physical functioning, substance and cigarette use.

Results: Most (80%) mothers had experienced abuse, and those with abuse during childhood had 3.82 greater odds of experiencing abuse in adulthood. Mothers who experienced abuse in both childhood and adulthood reported more depression, sleep disturbance, and substance use. Number of abuse forms was related to anxiety, depression, fatigue, pain, sleep disturbance, and substance use. Moderation analysis indicated that caregiving load intensified the relationship between abuse history and maternal anxiety, depression, and sleep disturbance; child-related hassles intensified the relationship between abuse history and maternal fatigue and pain.

Implications: The study confirmed the high prevalence of abuse history and the deleterious effects of experiencing abuse on maternal health among women with mental disorders. We also extended the extant research by demonstrating that these effects are intensified by parenting-related stress. Service providers should routinely ask female clients about their abuse history and their caregiving-related stressors to deliver trauma-informed services addressing the consequences of abuse as well as parenting stress. Further research is warranted to develop and evaluate interventions tailored for mothers with mental disorders who are survivors of abuse to improve maternal and child wellbeing.

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Paper Session 20

4:15 PM-4:30 PM

DAILY REPORTS OF SLEEP AND SMOKING ABSTINENCE: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Background: There is preliminary evidence that sleep duration and sleep quality are associated with smoking cessation. Yet, few studies have examined mechanisms linking sleep with smoking lapse.

Methods: Data from a pilot three-armed randomized clinical trial of a smartphone-based smoking cessation intervention among adults (N=81) were used to examine mechanisms linking sleep (i.e., hours of sleep each night, sleep quality) and smoking lapse. Participants were loaned a smartphone and asked to complete ecological momentary assessments (EMAs) one week pre-quit and the first 4-weeks following the quit attempt. EMAs assessed daily sleep and wake times, sleep quality, positive and negative affect, smoking urge, stress, and smoking status. Multilevel mediation models were conducted to estimate the associations between sleep, affect, urge, stress, and daily smoking status controlling for age, sex, education, race (White vs. non-White), intervention group, and heaviness of smoking at baseline.

Results: Participants were primarily male (51.2%), White (67.9%), 49.4 years old (SD=12.2), and completed 169 EMAs during the 4-week post-quit period on average. Paths from sleep duration and quality to positive affect, smoking urge, and stress ($\beta=-0.08\sim-0.09$, $p=.0001\sim.02$) and from positive affect, smoking urge, and stress ($\beta=-0.08\sim-0.18$, $p=.0001\sim.09$) to daily smoking status were significant. None of the direct effects between sleep quality and duration and daily smoking status were significant. However, the random indirect effects between sleep quality and smoking status via positive affect, smoking urge, and stress ($\beta=-0.02$, $p=.005$; $\beta=-0.02$, $p=.01$; $\beta=-0.01$, $p=.07$ respectively) were significant, suggesting complete mediation.

Conclusion: While sleep duration was related to psychosocial factors that have been previously associated with smoking lapse, there was no direct relationship between sleep duration and daily smoking status. However, results indicated that poor sleep quality may increase risk for smoking lapse through direct effects on positive affect, smoking urge, and stress. Future research should determine if interventions that focus on improving sleep quality during a smoking cessation attempt can increase cessation success rates.

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MERITORIOUS AWARD WINNER

Paper Session 20

4:30 PM-4:45 PM

AGREEMENT BETWEEN PERCEIVED AND PHYSIOLOGICAL STRESS IN PREGNANT WOMEN ACROSS A COGNITIVE-BEHAVIORAL INTERVENTION

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Adverse impacts of stress are known to be amplified during the prenatal period which is a normatively stressful period. Chronic exposure to even normative stress adversely affects both maternal and fetal health. Cognitive-behavioral therapy (CBT) interventions such as Mothers and Babies (MB) are well-established in improving maternal mental health, although we are not aware of existing studies that have attempted to augment CBT interventions with delivery of additional just-in-time content. This pilot study measured maternal physiological and perceived stress response in real time and used these data to deliver additional just-in-time content to fifteen pregnant women in their second trimester. Participants wore a novel miniaturized flexible device, Biostamp research Connect, measuring electrocardiogram (ECG) signals, and responded to at-most five ecological momentary assessments (EMAs) sent daily to report on perceived stress. The MB intervention contains 12 sessions where participants receive instruction from a facilitator in person or by phone teaching them to apply stress reduction techniques. Daily perceived stress responses to EMAs were measured using the average of responses to the Perceived Stress Scale (PSS-4). A machine learning model was built to estimate total minutes of physiological stress exposure from ECG signals from the wearable sensor. A perceived stress slope and physiological stress slope is calculated across the 12 weeks to signify an increase or decrease in perceived and physiological stress respectively. 9 out of 11 pregnant women showed a reduction in daily levels of physiological stress (4 out of the 15 did not provide sufficient sensor data), and 7 out of the 14 pregnant women showed reductions in daily perceived stress responses (1 participant did not adhere to EMA responses). 8 out of the 11 pregnant women showed agreement between slope of physiological and perceived stress. This study showed feasibility of a CBT-informed intervention augmented with JIT responses on reducing both physiological and perceived stress response. A small randomized trial is now underway (N=100) to test the impact of Wellness-4-2 on maternal wellbeing and downstream impact on infant neurodevelopment. Further study in larger samples is warranted to determine the efficacy of this, and similar interventions, and determine efficacy of a real-time intervention delivered only during detected stressful days.

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Paper Session 21

3:30 PM-3:45 PM

LIFESTYLE REDESIGN OCCUPATIONAL THERAPY IN PRIMARY CARE: IMPACT ON HEALTHCARE UTILIZATION AMONG INDIVIDUALS WITH DIABETES

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Background: An estimated 30.3 million people in the US have diabetes, with one in four health care dollars spent on caring for individuals with diabetes, at an annual cost of \$327 billion per year. As 72% of diabetes appointments take place in primary care, improvements in diabetes care in this setting may reduce the need for more costly specialty care and acute care services (emergency department [ED] visits and hospitalizations). As part of a hybrid effectiveness-implementation study conducted in a safety net primary care clinic within a large urban public health system, we assessed the impact of Lifestyle Redesign occupational therapy (LR-OT), an evidence-based lifestyle intervention, on acute care utilization among patients with diabetes.

Methods: Clinic patients with diabetes and HbA1c >9.0% were referred to the study using a randomized consent design in which patients were assigned to (a) be offered LR-OT services (up to 8 one-hour sessions) (n=73), or (b) serve as a no-contact comparison group (n=69). Patients' ED visits, hospitalizations, and length of inpatient stay were extracted from the EMR for 12 months prior to, and 12 months following, each patient's study enrollment date. Data were compared on an intention-to-treat basis.

Results: Acute care utilization decreased in the LR-OT group and increased in the control group in the 12 months following study enrollment, compared to the 12 months prior to enrollment. For ED visits, utilization decreased by 30.3% in the LR-OT group and increased by 18.9% in the control group (p=0.09). Hospitalizations decreased by 44.4% in the LR-OT group and increased by 11.1% in the control group (p=0.09). Average length of stay decreased by 0.1 days in the LR-OT group and increased by 1.3 days in the control group. We estimate the cost savings associated with these differences in acute care utilization at approximately \$5,100 per patient per year.

Discussion: Given the increasing incidence of diabetes and impetus for cost saving interventions, these data suggest that integrating LR-OT services in primary care may be effective at reducing costs associated with acute care utilization among individuals with diabetes. However, these findings are preliminary, as the study was not powered to detect statistical significance for healthcare utilization outcomes. Replication in a larger, fully powered randomized trial is needed to evaluate the robustness of the observed effects.

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Paper Session 21

3:45 PM-4:00 PM

FEASIBILITY OF AN INTEGRATED APPROACH TO COORDINATE CARE ACROSS CLINICAL AND COMMUNITY SETTINGS TO PREVENT CHILDHOOD OBESITY

Jennifer S. Savage, PhD¹, Lisa Bailey Davis, D.Ed., R.D.², Samantha M. R. Kling, PhD, RD³, Holly Harris, BSc, PhD⁴, Jacob Mowery, BA⁵, Shawnee Lutchter, B.S. Exercise Science⁶, Michele Marini, MS¹

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Economically disadvantaged newborns receive care from pediatric primary care providers (PCPs) and Women, Infant and Children (WIC) nutritionists; however, care is not coordinated between settings. The feasibility of an integrated approach to coordinate care will be described. WIC-eligible caregivers and infants (n= 131) receiving pediatric care were recruited and randomized to the intervention (Savage, BMC Pediatrics, 2018) or control groups. The intervention included 1) Early Healthy Lifestyles (EHL), a parent self-assessment tool; 2) responsive parenting curriculum delivered by WIC and PCPs; and 3) data sharing and care coordination between settings facilitated by health information technology. Data sharing occurred bidirectionally between settings; from WIC to PCP (i.e., PCPs could view WIC data or vice versa) and care could be coordinated when PCPs interact with WIC data (or vice versa). The feasibility of sharing data to coordinate care was evaluated using the infant's electronic health record and WIC data management system. Results revealed that caregiver-infant dyads attended 459 (3.50±1.03/dyad) PCP and 296 (2.26±0.97/dyad) WIC visits over the 6-month intervention. Overall, parents completed the EHL prior to 53% (1.86±1.15/dyad) of the PCP visits. These data along with agreed upon elements were shared with WIC following 100% of PCP visits, and 50% of the time a WIC visit followed a PCP visit. Thus, there were 1.76±0.81 PCP to WIC care coordination opportunities per dyad. When this happened, WIC coordinated care at 67% of opportunities (1.18±0.85/dyad). Data were shared from 67% of WIC visits (1.5±0.95/dyad), and 59% of the time a PCP visit followed a WIC visit. Thus, there were 0.89±0.78 WIC to PCP care coordination opportunities per dyad. When this occurred, PCPs coordinated care at 44% of opportunities (0.39±0.58/dyad). Coordinating care between parents, clinical and community settings through patient-reported measures, data integration, and electronic data sharing is a feasible strategy. However, between-participant variability in timing, sequence and frequency of visits underscores the need for flexible approaches in pragmatic studies and longer intervention period to increase dose. Workflow integration is a key factor that enabled PCP data sharing while partial-integration limited WIC data sharing. PCPs and WIC used data received to coordinate care, but WIC nutritionists were more likely to do so than PCPs.

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Paper Session 21

4:00 PM-4:15 PM

PATIENT AND PROVIDER PERCEPTIONS OF THE PATIENT-CENTERED CARE EXPERIENCE IN URGENT CARE SETTINGS

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There has been tremendous growth in the urgent care (UC) model of healthcare delivery. We sought to examine the communication experiences and quality of care perceptions of both patients who visited UC and the providers who practice in this setting.

Two surveys assessed: 1) patient perspectives: 402 Mechanical Turk respondents who had visited UC within the past year (52.7% male, modal age 25-34 yrs.); and 2) provider perspectives: 69 providers working in UC settings in the Southern United States (33.3% male, mean age = 43.6 years, SD= 9.28, 42% nurse practitioners, 33.3% physicians assistants, 21.7% physicians). Both patients and providers answered questions about their UC experiences on six core functions of patient-centered communication: fostering healing relationships, exchanging information, responding to emotions, making decisions, enabling patient self-management, and managing uncertainty (1=strongly disagree to 5=strongly agree) and reported on overall quality of care (1=poor to 5=excellent). In addition, both patients and providers compared their experience in UC to other healthcare settings.

89% of UC providers and 79% of patients reported excellent or very good overall quality in UC. Although UC patients (Mean=4.05, SD=.84) and providers (Mean=4.34, SD=.44) reported high levels of patients-centered communication across the 6 functions, patient responses showed potential areas for improvement. A sizeable proportion of UC patients did not agree these 6 functions were fulfilled, particularly in the areas of responding to patients thoughts and feelings (27%), involving patients in decisions making (27%), and managing uncertainty (23%). Over 90% of UC providers responded that they were meeting patient needs on these functions; the majority of UC providers perceived the same (58%) or better (30%) quality of care at UC compared to other healthcare settings. 33% of UC patients reported they would rather visit urgent care than their primary care provider. Providers who reported less burnout and greater empathy and patients who had more health-related self-efficacy experienced significantly greater patient-centered communication in UC.

Patients and providers seemed relatively positive about the communication and care experience in UC as compared to other healthcare delivery settings. As the UC model of healthcare delivery grows, it is important to identify areas of patient-centered care, such as addressing patient emotions and involving patients in decision-making, which can improve the care experience for UC patients.

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Paper Session 21

4:15 PM-4:30 PM

BRIEF BEHAVIORAL ACTIVATION FOR DEPRESSIVE SYMPTOMS IN PRIMARY CARE: A MULTI-SITE RANDOMIZED CONTROLLED TRIAL

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Depressive symptoms are commonly reported by primary care patients. Existing evidence-based brief psychotherapies for depression are not translatable within primary care for a variety of reasons, including the number and duration of appointments exceeding what is feasible within primary care and interventions not being designed for patients reporting a range of depressive symptoms from moderate to severe. Behavioral activation (BA), a component of cognitive-behavioral treatment for depression, is an ideal choice to examine for its efficacy in this setting as it has been found to be effective with difficult-to-treat populations and can be implemented by a variety of healthcare providers. BA uses values assessment and activity scheduling to engage patients in meaningful experiences. We will present results of a multi-site randomized controlled trial of a brief form of BA designed for primary care (BA-PC) comprised of two 30-minute appointments with two booster appointments. A total of 140 veterans (age M=53 SD=15.2 years; 91.4% male) from three primary care clinics were randomized to BA-PC or integrated primary care treatment as usual (TAU). All participants reported at least moderate depressive symptoms (≥ 10 on the Patient Health Questionnaire-9 [PHQ-9]). Participants completed assessments every 2 weeks throughout the 12-week trial. Mixed-level modeling showed participants in both TAU and BA-PC experienced significant declines in PHQ from baseline to week 3 ($p < .0001$), which was prior to receiving any treatment ($M=3.4$ weeks to first treatment in both conditions). Participants in the BA-PC condition continued to improve to week 12 ($p < .01$). However, we did not find an overall condition effect at week 12. Secondary analyses showed of those participants who still reported at least moderate symptoms after the initial assessment, 20.9% participants in TAU versus 43.6% in the BA-PC condition, $z(df=1)=-2.36$, $p < .01$, had PHQ-9 scores drop < 10 at week 12, a sign of no need for further treatment. Future research and clinical implications related to the impact of regular symptom assessments will be discussed.

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Paper Session 21

4:30 PM-4:45 PM

THE IMPACT OF BRIEF INTERVENTIONS ON FUNCTIONING IN PRIMARY CARE: THE EFFECTIVENESS OF THE PRIMARY CARE BEHAVIORAL HEALTH MODEL

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The limited scalability combined with limited opportunities for patients to receive evidence-based interventions in the current model of treatment for anxiety and depression creates a gap in access to adequate care. Primary Care Behavioral Health (PCBH) is one model of treatment in which behavioral health consultants (BHC) work directly with primary care providers. Beneficiaries (N = 5,402) of the military healthcare system seen by BHCs were assessed for functioning outcomes and the appointment characteristics. The study sample was predominately Caucasian, female, military dependents seen for 2 to 4 appointments. A reliable change index revealed that, of the 5,402 individuals analyzed, 52.55% showed *improvement*, 17.16% showed *reliable improvement*, 24.21% showed *deterioration*, 2.44% showed *reliable deterioration* and, 3.63% of the sample showed no change ($p < 0.05$). Of individuals with a *severe* BHM-20 GMH score at baseline, 81.50% showed some improvement at their final appointment, with 33.01% falling under *reliable improvement*. A mixed model analysis was used to determine the predictive value of appointment characteristics. All relations were significant ($p < 0.001$), except the between-subjects effect of appointment duration. Appointment duration revealed a negative within-subjects relation; individuals reported worse functioning at the start of atypically long appointments. Appointment interval revealed a negative between-subjects and positive within-subjects relation; individuals with longer mean time between appointments reported worse functioning but better functioning at appointments following an atypically long interval. Appointment number revealed a negative between-subjects and positive within-subjects relation; individuals with more appointments reported worse functioning outcomes but better functioning across appointments. In summary, the current study provides additional data to support the effectiveness of the PCBH model, to include a conservative measure of clinically meaningful change and the effect of appointment characteristics on functioning outcomes. One in six individuals with anxiety, depression, or adjustment disorder showed reliable improvement, with the greatest rates of reliable improvement in individuals with severe functioning at baseline and individuals with a greater total number of appointments reported worse functioning outcomes. Overall, these data support the effectiveness of time-limited care provided through the PCBH model.

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Paper Session 22

3:30 PM-3:45 PM

USING PERCEPTUAL MAPPING TO UNDERSTAND PREP USE IN TRANS WOMEN BY PATIENT SELF-ADVOCACY: IMPLICATIONS FOR MESSAGE DEVELOPMENT

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Background: US estimates indicate trans women are 34 times more likely to have HIV. Pre-exposure prophylaxis (PrEP) shows significant promise for reducing HIV risk, but trans women have low levels of use. Understanding unique barriers to PrEP use among trans women is important for reaching this at-risk population.

Methods: 128 trans women from Philadelphia and San Francisco were surveyed to assess perceptions about PrEP. A k-means cluster analysis using a modified patient self-advocacy (PSA) scale was conducted and then Perceptual mapping (multidimensional scaling) and vector modeling methods were used to create 3-dimensional maps to show how barriers and facilitators to PrEP use differed by group and potential message strategies for an intervention. This method is used in commercial marketing to assess highly targeted strategies for message development.

Results: Perceptual maps show conceptual differences about barriers and benefits of PrEP use between “engagers” (high PSA) and “avoiders” (low PSA). Message strategies for benefits of PrEP use were similar (“Makes me feel in charge”), but were dissimilar for barriers (Engagers were concerned about feeling less feminine if on PrEP and noted a preference for using condoms. Avoiders were concerned that even if they were on PrEP they would get “HIV anyway”). Both groups were concerned about the possible effect on hormones. Additional message strategies for engagers include addressing that they have worries about other “more important” things in life and a concern that their sex partners would think they would “give them HIV” if on PrEP. Importantly, both groups say that spending time in the trans community and that having sex is an important way to feel good about being a trans woman were important and could be emphasized in messaging.

Conclusions: These methods are useful in understanding trans women's unique PrEP perceptions and potential message strategies that could be embedded in communication and interventions. While conceptual differences were seen in those with high and low PSA, message strategies are similar, making it possible to target interventions to both groups.

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CITATION AWARD WINNER

Paper Session 22

3:45 PM-4:00 PM

A PRAGMATIC RANDOMIZED CONTROLLED TRIAL TO ACCELERATE DIFFUSION OF PRE-EXPOSURE PROPHYLAXIS FOR HIV PREVENTION

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Background: Despite clear efficacy of Pre-Exposure Prophylaxis (PrEP) in preventing HIV transmission, meaningful uptake in populations most likely to seroconvert has yet to occur. Newer network type interventions may be useful for PrEP implementation, particularly as the epidemic in the United States becomes more concentrated.

Methods: We tested a peer change agent Type I network intervention aimed at increasing early PrEP linkage to care among the network members connected to young Black men who have sex with men (YBMSM) experiencing high rates of HIV from 2016-2018. The intervention included a single half-day training and mini-booster sessions on how YBMSM can engage and motivate their network members to seek out and start PrEP. We randomly assigned 423 YBMSM in Chicago to receive the network intervention versus a time-matched control, with an independently collected primary surrogate outcome of PrEP referral and/or linkage to a PrEP orientation appointment among the Facebook network friends of YBMSM study participants.

Results: Each study participant in the trial had on average 1822 Facebook network friends. Over the 55-week observation period, there were 65 network members with observed PrEP referral or linkage to care. Network members with referral or linkage were more likely to be connected to study participants in the intervention arm than the control condition (aOR 1.50 (1.09-2.06); $p=0.012$). During the observation period PrEP referral was most likely to occur within 3 days of an intervention session compared to control OR 0.07 (0.02-0.013); $p=0.007$) resulting in 1-2 referrals of network members per session.

Conclusions: A peer change agent Type I network intervention was effective at diffusing PrEP through a social network of individuals highly susceptible to HIV. This low intensity intervention demonstrated network level impact in increasing PrEP referral and linkage to care among populations that have experienced limited PrEP care engagement in the United States. (Funded by the National Institute of Allergy and Infectious Diseases; ClinicalTrials.gov number, NCT 02896699)

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Paper Session 22

4:00 PM-4:15 PM

ADDRESSING LIFE STRESSORS: RESULTS OF AN INDIVIDUALLY TAILORED INTERVENTION FOR PATIENTS WITH A HISTORY OF REPEAT STIS

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Background: HIV and sexually transmitted infection (STI) counseling and testing services focus on behavior change theory, but patients presenting with repeatedly acquired STIs indicate the need for more intensive services focused on broader, upstream life stressors inhibiting behavior change. We sought to test the efficacy of an individually tailored socio-contextual intervention focused on addressing life stressors to reduce repeat STI risk.

Methods: A Midwestern sample of STI clinic patients with a history of repeatedly acquired STIs ($n = 128$, $M_{age} = 29$ years, 65% male, 91% Black or African-American) were randomized to receive either the standard of care intervention or experimental, individually tailored strengths-based prevention case management with electronic health record chart review conducted at 12 months post-intervention to compare rates of incident STI. We used multiple imputation to support intent-to-treat and fully-adjusted logistic regression precision model analyses.

Results: Individuals who received the experimental intervention had a lower rate of repeat infection compared to the standard of care group at 12 months post-intervention (37% vs. 43%, respectively). After adjusting for baseline variable imbalances and precision variables, patients in the standard of care group had 2.37 times higher odds of repeat infection compared to those in the experimental group at 12 months post-intervention ($p = 0.065$). Individuals who scored higher in internal locus of control had significantly lower odds of subsequent STI (AOR = 0.91; $p = 0.046$). Higher score on the drug abuse screening test (i.e., DAST-10) was significantly associated with higher odds of subsequent STI (AOR = 1.47; $p = 0.002$).

Discussion: A supplemental, case management intervention had a meaningful intervention effect on reducing repeat STI risk among patients with a history of repeat infections in our underpowered analysis. Prioritizing socio-contextual needs is important when patients present with repeat infection. Combining this intervention strategy with STI partner referral services and substance use prevention and treatment programs should be tested in future implementation science research to further reduce the risk of repeatedly acquired STIs among STI clinic patients with a history of recurrent STIs.

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Paper Session 22

4:15 PM-4:30 PM

TRAJECTORIES OF HIV RISK BEHAVIORS AND SUBSTANCE USE AFTER INITIATING PRE-EXPOSURE PROPHYLAXIS (PREP) IN A CLINICAL SETTING

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Introduction: The past decade has been marked by significant advances in biomedical prevention of HIV including the use of antiretroviral medication as pre-exposure prophylaxis (PrEP). Several studies have identified patient and provider concerns that PrEP could result in “risk compensation” or an increase in several HIV risk behaviors. The purpose of this study was to evaluate that hypothesis by examining trajectories of alcohol, substance, and high-risk sexual behavior after initiating PrEP in a clinical setting.

Methods: Patients from a hospital-based clinic who identify as men who have sex with men (N=248) completed surveys at their PrEP visits, which occurred approximately every 3 months, per clinical guidelines. For this study, participants were followed for a maximum of 18 months after their first PrEP visit (up to 6 PrEP visits). Latent class growth analysis identified classes of trajectories in binge drinking, and illicit drug use, and condomless anal sex frequency.

Results: Best-fitting LGCA models identified 3 classes for trajectories of binge drinking (BIC=1826.97, LMR-LRT=43.12, $p = .021$, BLRT=45.73, $p < .001$, Entropy = 0.76), 2 classes for trajectories of illicit substance use (BIC=758.12, LMR-LRT=105.78, $p = .002$, BLRT=112.18, $p < .001$, Entropy = 0.92), and 2 classes for trajectories of sexual risk (BIC=5063.73, LMR-LRT=217.7, $p = .042$, BLRT=230.87, $p < .001$, Entropy = 0.97) over the initial 18 months of PrEP care. In that time, there were no significant increases in any of these risk behaviors. In fact, those with the highest use of alcohol use gradually reduced their use ($b_1 = -0.14$) after starting PrEP. The same downward trend was found for those with the highest illicit substance use to start ($b_1 = -0.2$). Those with a highest number of condomless anal sex partners saw a small, but non-significant increase in partners (by .83 partners).

Discussion: Findings demonstrated that alcohol use, illicit substance use, and sexual transmission risk behavior did not significantly increase after PrEP initiation. Concerns about increased risk after initiation are often cited as a barrier among providers and patients; however, our results directly contradict the risk compensation narrative. From a public health perspective, it may be helpful to use these findings to inform future clinical interventions and educational materials provided to patients.

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Paper Session 22

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ADAPTING A POSITIVE AFFECT INTERVENTION FOR MOBILE DELIVERY: DEVELOPMENT OF THE POSITIVELY HEALTHY APP BASED INTERVENTION

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Background: Individuals living with HIV are disproportionately affected by stressful life events. Stress is not only associated with HIV progression, it is also linked to transmission risk behavior. In the United States, the majority of individuals living with HIV are sexual minority men (SMM) for whom sexual minority stress and HIV-related stress add to general life stressors to increase health risks. Studies show that mindfulness and positive affect buffer against stress for HIV+ individuals, however limited research has examined their potential health benefits for HIV+SMM. Moskowitz's (2014) Positive Affect intervention includes a mindfulness module, and has demonstrated efficacy in populations living with HIV. In our proof-of-concept pilot, we adapted the Positive Affect intervention for mobile app delivery.

Methods: The Positively Healthy app was designed as an ecological momentary intervention (EMI), and uses a just-in-time-adaptive-intervention (JITAI) delivery format. Participants were 22 HIV+SMM ($M_{age} = 37.82$; $SD = 10.52$), the majority were Black (31.8%) or Latino (31.8%). Participants completed a baseline assessment, where we introduced to app based intervention. Participants then completed a 90-day ecological momentary assessment (EMA). JITAI activities were triggered, based on reported stress in the EMA survey, at a 2:1 ratio. Over the 90 day intervention period, participants also received a daily positive message, and had access to on demand content in the app. After 90 days, participants completed a post-intervention assessment and focus group session, where we assessed feasibility and acceptability of the Positively Healthy app.

RESULTS. On average, participants reported feeling stressed 25/90 days. Participants responded to 82.1% of the intervention activities and viewed 62% of the positive messages over 90-day period. A review of our qualitative interview data indicated that the app based delivery was acceptable and feasible for HIV+SMM. However, participant feedback also revealed that our intervention content would benefit from further adaptation to enhance its cultural appropriateness for our target population. Our focus group data indicated that participants related most to the mindfulness content within the app, and they expressed interest in using the app in adjunct to a mindfulness-based practice (e.g. yoga).

Conclusion: Our proof-of-concept pilot findings suggest the mobile app is an acceptable and feasible platform for delivery. We note that this adaption did not include tailoring the intervention content to the unique needs of HIV+SMM. Future directions for this research include utilizing community input to further adapt the Positively Healthy app to maximize its relevance and acceptability for HIV+SMM. This formative research is a necessary first step in planning for a larger trial to test the efficacy of the adapted intervention.

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Paper Session 23

3:30 PM-3:45 PM

HABLANDO CLARO: CLEAR TALK! APPLYING AN INTERGENERATIONAL APPROACH TO PREVENT HIV AMONG LATINAS

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Background: Hispanic/Latinos in the U.S. are disproportionately affected by HIV/AIDS. By 2016, Latino men who had sex with other men were the second most-affected subpopulation, and HIV diagnoses in Latino gay/bisexual men increased by 13%. Latinas who engaged in heterosexual contact were the fifth most-affected subpopulation. One in 6 are unaware of their HIV status. Despite public health efforts, Latinas experience a complex set of factors that place them at risk for infection. Risk factors include lack of access to health care, low socioeconomic status, traditional cultural norms (e.g., lack of sexual health communication), and low rates of HIV testing due to lack of knowledge and low perceived risk.

Objective: To test the efficacy of Hablando Claro: Clear Talk!, a culturally tailored intervention to reduce HIV infection risk among Latina adolescents (12-18 years old) and their female caregivers by increasing HIV knowledge, intergenerational sexual communication, and HIV testing.

Methods: Hablando Claro: Clear Talk! is an adaption of the evidence-based intervention Teen Health Project. Intergenerational dyads participated in one introductory session, two half-day sessions, and four monthly support groups led by trained community health workers. Intervention content, discussions, and activities based on Social Cognitive Theory focused on increasing: 1) HIV knowledge; 2) adolescent-caregiver communication about sex; and 3) HIV/STI risk reduction skills, self-efficacy, and testing. A one-group pretest-posttest design was used to assess the efficacy of the intervention. Assessments were self- or verbally administered prior to the sessions (pretest), immediately after (posttest), and three months after the intervention.

Results: Adolescents and their female caregivers (N=293) enrolled in the study. From pretest to three-month follow-up, HIV knowledge increased for adolescents and caregivers ($p < 0.001$ for each) and HIV testing increased significantly for adolescents ($p < 0.05$). Significant increases were observed for adolescent-caregiver sexual health communication as well as comfort in communicating about sex for both adolescents and caregivers ($p < 0.001$).

Conclusion: Our findings provide preliminary evidence that integrating sexual health and HIV risk-related knowledge with skills-based practice for Latina women and adolescents are effective components of a culturally tailored HIV prevention intervention for Latinas.

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Paper Session 23

3:45 PM-4:00 PM

COMPARING VARIATIONS IN CHILDHOOD SEXUAL TRAUMA MEASURES IN PREDICTING ADVERSE HEALTH & FUNCTIONING OUTCOMES IN ADULTHOOD

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Background: Research has linked experiences of childhood sexual trauma (CST) with adverse adult outcomes that span physical, psychological, and social domains of functioning. Differences in conceptualizing and measuring CST, however, have produced inconsistent results and inhibit the examination of basic trauma-related variables hypothesized to impact adult outcomes. In general, CST measurement lacks a conceptual grounding in established theoretical frameworks such as traumatic stress models. We compared a commonly used measure of CST (exposure) with a theoretically-derived measure of a key dimension of CST severity (i.e., duration; Hoier et al., 1992); measures are compared with regards to adverse adult outcomes across multiple domains. The majority of past studies are additionally impeded by the use of small/opportunistic samples with limited variation in outcome measures. We address this problem by using data from the National Sexual Health Survey (NSHS).

Methods: The NSHS is a national probability sample of U.S. adults (18-70 yrs.; N=6,537). Measures assessed perpetrator-specific sexual experiences in childhood (< 18 years) that involved the use of force or threats, the number of perpetrators, and the length of time over which the sexual trauma occurred with each perpetrator. We compared a dichotomous CST exposure measure to a multi-level measure of trauma duration. Controlling for background characteristics (age, race/ethnicity, gender, sexual orientation) we compared CST measures in the prediction of adverse outcomes across domains of physical (3 outcomes) and mental health (6 outcomes), intimate relationships (3 outcomes), & achievement (4 outcomes) (logistic regression & likelihood ratio tests).

Results: Relative to the CST exposure measure, the multi-level CST severity measure had significantly larger relationships to five adverse outcomes within two of the domains examined (mental health, achievement). Both measures had significant but similar relationships to all remaining outcomes. The multi-level variable showed significant dose-response relationships (i.e., greater duration with more adverse outcomes) in 7 models. Generally, those reporting the highest degree of CST severity demonstrated the largest effects. We observed both linear and non-linear relationships to adult outcomes.

Conclusions: The current findings suggest that a theoretically-derived measure of CST severity provides substantially more information about adverse outcomes in adulthood than more commonly used measures of CST exposure. The results also suggest that chronic traumatic stress related to CST should be studied in large heterogeneous samples where a wider range of outcomes and outcome values are employed. Integrating theoretical concepts to standardize CST measurement has important implications for screening and secondary prevention across the life span.

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CITATION AWARD WINNER

Paper Session 23

4:00 PM-4:15 PM

IDENTIFICATION AND CHANGES IN PERCEIVED STIGMA
INTERSECTIONALITY WITHIN A VIRTUAL COMMUNITY OF
YOUNG PEOPLE LIVING WITH HIV

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Background: Intersectionality refers to the idea that multiple aspects of social identity (e.g., race, sexual orientation) can interact to create and maintain health disparities. The accumulated burden of these perceived stigmas may be key to addressing HIV disparities in linkage to care and viral suppression. *Positive Peers* is a smartphone application, that aims to provide young people living with HIV (YPLH) a supportive virtual community to counteract perceived stigma and ultimately better manage their illness.

Method: A mixed methods study that included survey and intensive interviewing modalities was conducted with out-of-care or newly diagnosed young people (18-34) living with HIV. Participants volunteered to download the *Positive Peers* mobile application to their phones and participate in a prospective observational study for 18 months. *Positive Peers* offers users multiple health management, tools and information, SMS communication functions, and frequently refreshed HIV relevant blogs and advice. Demographic data, medical record data, self-reports of perceived stigma were collected at enrollment, and prospectively at six, 12 and 18 months from baseline (n = 128).

Results: Interview transcripts revealed that most participants viewed themselves as outside the boundaries of mainstream society, and also as targets of discrimination and social exclusion. We detected the repeated theme that living with HIV created an additional layer of minority status to an existing intersectional social identity of being black and LGBTQ. Participants desired virtual space defined by inclusion and security and described *Positive Peers* as a non-discriminatory community consisting of people with similar life experiences. Fixed effects regression analysis showed a trend for decreased overall perceived stigma ($f = 3.62$, $p < .059$), and significant decrease in negative self-image ($f = 6.03$, $p < .015$) across the study period for all participants. On average the effect is small, but with some significant variation between participant ethnic groups, age, and disease status.

Discussion: Positive HIV status functions as a layer of intersectionality with race and sexual orientation that compounds the stigma perceived by YPLH. The *Positive Peers* mobile application provides a virtual space where disparity populations can normalize their experience. These data support the notion that technology interventions tailored toward disparity groups may be useful tools for reducing the burden of intersectional stigma and support HIV care outcomes.

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Paper Session 23

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RISK FACTORS OF CONSENSUAL AND SURVIVAL SEX IN A SAMPLE
OF HOMELESS AND FORMERLY HOMELESS YOUNG ADULTS

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Introduction: Daily recall methods have been successful in capturing sex events and understanding context and correlates in high-risk samples, such as young adults experiencing homelessness. Although homelessness among young adults is thought to be associated with risky sex, including exchanging sex for goods or services (i.e., survival sex), less is known about sex risk among young adults who have transitioned from homelessness to housing programs compared to those who remain homeless.

Objective: The objective of this study was to examine predictors of consensual and survival sex events in a sample of homeless and formerly homeless young adults.

Methods: Participants (N=123 housed, 109 homeless) were recruited from housing and service programs. Participants completed a questionnaire examining previous 90-day consensual and survival sex events, followed by a 7-day smartphone-based daily-recall regarding consensual and survival sex events. Age ($M=22.2$, $SD=2.3$), gender (54% male), race (42% Black), ethnicity (37% Hispanic), housing status, and relationship status (34% exclusively monogamous) were entered as covariates in logistic regressions predicting whether or not an individual had consensual sex or survival sex over the measurement period.

Results: Approximately 80% of participants reported consensual sex in the past 90 days, 28% reported consensual sex over 7 days, and 10% reported survival sex either in the past 90 days or over 7 days. Sex events in the past 90 days were positively associated with consensual sex during the week, and survival sex in the past 90 days was positively associated with survival sex during the week ($ps < 0.001$). Those in an exclusively monogamous relationship were more likely to report having any sex event during the week and more sex in the past 90 days than individuals in other relationships ($ps < 0.001$). Homeless participants were more likely to report survival sex during the week than participants in housing programs ($p < 0.01$).

Discussion: The study found that housing status may be protective against risky survival sex events, regardless of relationship status, indicating that supportive housing programs may provide a more stable environment. Although relationship status was an indicator for consensual sex events, exclusively monogamous relationships are thought to be low-risk. Future studies may seek to exclusively sample high-risk individuals, such as those in unstable relationships, to facilitate within-subject findings.

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Paper Session 23

4:30 PM-4:45 PM

SCALING UP EVIDENCE-BASED TEEN PREGNANCY PREVENTION IN HIGH-NEED COMMUNITIES: THE KEEPING IT REAL TOGETHER INTERVENTION

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Introduction: Numerous factors facilitate the scale-up of evidence-based prevention interventions (EBIs) in community settings, including incorporating EBIs within existing systems, building organizational infrastructure and capacity for EBIs through training and technical assistance, establishing practitioner-scientist partnerships, and utilizing data systems to assess needs and evaluate impacts. Since 2010, the Teen Pregnancy Prevention Program, funded by the US Department of Health and Human Services, has sponsored efforts to scale up and evaluate EBIs that target sexual risk behaviors among youth. We describe the results of a multi-component project that scaled up an HIV/AIDS and pregnancy prevention intervention in schools and surrounding high-need communities located in Los Angeles County.

Methods: Over an 8-year period, we recruited 42 middle schools and 325 teachers to implement a comprehensive sexual health education program. Process evaluation data were collected from teachers, including student attendance, dosage, implementation fidelity, and program acceptance. School-based program implementation occurred in the context of a community-wide intervention that also included parent education, community mobilization, and disseminating information about youth-friendly clinics. To assess the effectiveness of the program in delaying sexual onset, we surveyed 9th-grade students each spring, from 2012 to 2019, in 10 high schools that project middle schools fed into (n=8000). Using a quasi-experimental design, we compared two groups of youth, those who received and did not receive the intervention during middle school.

Results: Our scale-up model focused on capacity building in program sites, including teacher training and regular technical assistant visits from project staff; identifying and supporting a lead teacher at each school; creating an on-line toolkit for resources and online process evaluation data reporting; regular meetings of a Teacher Advisory Board; and establishing a system for collecting outcome data.

Overall, the program reached more than 50,000 students. Outcome data showed that students who had received the intervention were less likely to report initiation of sexual activity by 9th-grade compared to students who did not participate. The program group also reported few pre-sexual behaviors and better outcomes on psychosocial variables hypothesized to be mediator of program effects.

Conclusions: Scale-up of evidence-based programs in community settings requires not only resources (both internal and external), but also a plan for building capacity, supporting implementation, collecting evaluation data, and sustaining implementation that is co-developed and endorsed by key community stakeholders.

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Paper Session 24

3:30 PM-3:45 PM

EFFICACY OF A GENDER-RELEVANT TOBACCO CESSATION INTERVENTION AMONG LOW-INCOME WOMEN IN BRAZIL: RESULTS OF A RANDOMIZED TRIAL

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Background and Aim: The World Health Organization Framework Convention on Tobacco Control has identified understanding of women and their tobacco-related issues, as well as the need for the development of gender-relevant tobacco control efforts, a priority. We examined the efficacy of a theory-based, culturally- and gender-relevant Community Health Worker (CHW) intervention for low-income Brazilian women that augments the tobacco cessation program offered through the public health system (PHS). **Design:** Pragmatic group randomized controlled trial. **Setting:** Eight towns in a tobacco producing state in Brazil - Paraná. **Participants:** A total of 338 adult women current smokers recruited in the community were enrolled in the study between 2014-2017. **Intervention:** (1) Intervention (4 towns): 12 home visits by a CHW and scheduled appointment to attend the tobacco cessation program at the PHS; and (2) Control (4 towns): Scheduled appointment to attend the tobacco cessation program at the PHS. **Measurements:** The primary outcome was self-report abstinence at 7-month follow-up. An interviewer-administered questionnaire was administered at baseline and 7-month follow-up (e.g., demographics, depressive symptomatology, etc.) as well CO measurement.

Results: The overall retention rate at 7-month follow-up was 80.7% in the intervention group and 85.1% in the control group. Using intention-to-treat analysis, abstinence at 7-month-follow-up was 20% in the intervention group vs. 11% in the control group. Multivariable modeling showed that participants in the intervention arm had 1.88 times the odds of self-reported smoking cessation than control participants after adjustment for depressive symptomatology, self-efficacy, and having someone in the house that smokes. Only self-efficacy remained significant in the full model as a predictor of tobacco cessation. Replication of these analyses using the objective measure of CO at undetectable rates (cut-off score of 8ppm) yielded similar results.

Conclusions: A theory-based, culturally- and gender-relevant intervention delivered by trained CHWs can successfully promote tobacco cessation among low-income women.

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Paper Session 24

3:45 PM-4:00 PM

EFFECTS OF AEROBIC EXERCISE ON PATTERNS OF QUIT BEHAVIOR AMONG WOMEN: RESULTS FROM THE QUIT FOR HEALTH RCT

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Quit for Health was a randomized clinical trial designed to examine efficacy of aerobic exercise as an adjunct to smoking cessation treatment among women. Participants were randomized to 12 weeks of moderate intensity exercise (N=53) vs. 12 weeks of a video-based wellness program (N=52). Data were collected both at in-person sessions and via ecological momentary assessment (EMA) continuously over 12 weeks. The goal of analysis was to understand intervention effects on end of study cessation outcomes as well as patterns of quitting behavior over time. Longitudinal models implemented with Generalized Estimating Equations were used to assess group differences in bio-verified 7-day PPA at end of treatment. To further understand potential differences in quitting behavior over time, Latent Class models (LCMs) were used to identify patterns of real-time self-reported quit behavior over 12 weeks. Potential differences in the distribution of quitting patterns between-groups was assessed using ANOVA and associations between quitting pattern and smoking behavior at follow-up was examined using logistic regression. The overall sample consisted of 105 participants randomized to Exercise vs. Wellness. Participants were 42.5 years of age on average (SD=11.2), predominantly non-Hispanic (93%) with half reporting a college-level education. Participants smoked an average of 17.0 (SD=7.7) cig/day at baseline, with no significant between-group differences. Mean standardized nicotine dependence was -0.32 (SD=.98) at baseline, with significantly higher scores in Exercise vs. Wellness (p=.004). End of treatment outcomes indicate that at 12 weeks, 25% of Exercise participants had bio-verified 7-day PPA vs. 42% of Wellness participants (p=.10). LCMs supported 4 patterns of quit behavior. Specifically, 14% of participants quit by week 3 and had high probability of quitting through week 12 (*sustained quitters*); 49% of participants were *non-quitters*; 24% were *slow and steady quitters* (slope increased over time with high probability of quitting at week 11) and 13% had high probability of quitting at week 2 and a decline in quitting thereafter (*relapsers*). There were significant between-group differences in pattern (p=.04) with more Exercise participants in patterns characterized by slow and steady quitting behavior, which was, in turn, associated with continuous abstinence at 9-month (OR=1.16, 95% CI: 1.02-1.36) and 12-month (OR=1.08, 95% CI: 1.01-1.64) follow-up. In sum, while there was no direct effect of aerobic exercise on post-treatment (12-week) quitting behavior, engaging in exercise during quit attempts led to a more gradual pattern of quitting behavior, which was associated with continued smoking abstinence up to one year post-randomization.

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Paper Session 24

4:00 PM-4:15 PM

PILOT RCT OF A TAILORED SMOKING CESSATION PROGRAM FOR PEOPLE LIVING WITH HIV IN THE WASHINGTON, D.C. METROPOLITAN AREA

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Introduction: The prevalence of smoking among people living with HIV (PLWH) in Washington, D.C. is double the national average, at 40%. The morbidity and mortality attributed to tobacco-related disease in PLWH in the U.S. currently outweighs that due to HIV infection. Smoking cessation is key to improving the health of PLWH, however cessation programs for this population have had mixed results. This study evaluated the preliminary efficacy of a pilot RCT of a tailored intervention (TI) for smoking cessation targeting PLWH.

Methods: The TI included one in-person counseling session and a 2-way text messaging program for 30 days and integrated aspects of minority stress theory, intersectional identities, and cognitive behavioral therapy. Standard of care counseling was the control (SC). The primary outcome was smoking cessation at 1 month. Secondary outcomes included changes in cigarettes per day (CPD) and self-efficacy. Intent-to-treat analysis was used.

Results: A total of n=25 participants were enrolled (11 TI, 14 SC); n=2 were lost to follow up. The median age was 54 (IQR: 48,58) and most participants were male (n=18, 72%), African American (n=19, 76%), and making less than \$20,000/year (n=19, 76%). Half the sample identified as a sexual minority (n=13, 52%). Although not significant due to low power, the TI arm had larger proportions of African Americans (n=10/11, 91% TI vs. n=9/14, 64% SC) and menthol smokers (n=10/11, 91% TI vs. n=11/14, 79% SC), and greater CPD at baseline (median [IQR]: 15 [6,20] TI vs. 9 [1,15] SC). Although not significant, a lower proportion quit in the TI group than the SC group (n=3, 27% TI vs. n=5, 36% SC). However, there were greater reductions in CPD in the TI arm (-10 [-19,-3] TI vs. -0.5 [-15,0] SC). Self-efficacy to quit increased in both arms, and this was a significant increase from baseline to follow-up in the TI (p-value: 0.04). African American participants were significantly less likely to quit than those who were another race (RR: 0.32, p-value: 0.03). Only 7(28%) had been advised to quit by a provider in the previous 12 months, and most (n=22/23, 96%) indicated they would like more integration of quit services in their HIV care.

Discussion: This new intervention shows potential efficacy for smoking cessation among PLWH. Larger sample size is needed to fully evaluate the efficacy of this approach. Strategies to attenuate the impact of race on quitting smoking in PLWH should be integrated into future interventions.

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Paper Session 24

4:15 PM-4:30 PM

PREDICTORS OF SMOKING CESSATION ONE YEAR AFTER LUNG CANCER SCREENING WITHIN THE VETERANS HEALTH ADMINISTRATION, 2014-2018

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Background: Although the value of supporting smoking cessation as part of lung cancer screening is widely acknowledged, little is known about long-term cessation among screening patients in real-world treatment settings, including what characteristics are associated with quitting and whether screening results and tobacco treatment initiated at the time of screening predict long-term cessation. The objective of this study was to evaluate predictors of 1-year post-screening cessation outcomes within the largest integrated healthcare system in the US—the Veterans Health Administration (VHA).

Method: Administrative data from the VHA National Corporate Data Warehouse were used to identify Veterans who received a first low-dose CT (LDCT) for lung cancer screening between 2014 and 2018 and who had smoking Health Factors data available in the electronic medical record 9-15 months after LDCT. Multilevel modeling was used to evaluate individual demographic and clinical predictors of cessation after controlling for facility-level random effects.

Results: Of the 32,707 Veterans (95% male) identified as current smokers at the time of first screening, 5,129 (15.7%) were no longer smoking one year later. Predictors of cessation included older age, being unmarried; having more physical health conditions; absence of a trauma/stress-related disorder or a personality disorder; receiving first screening in 2018; and having suspicious screening findings (LungRADS=4) (all p-values < .05). Receipt of cessation treatment (behavioral and/or pharmacological; 18.2% of sample) was not a significant predictor of quitting (p=.072).

Conclusions: One-year quit rates within the VHA were comparable to those observed previously in clinical trials and cohort studies of lung cancer screening (i.e., 10-17%). Taken together with our previous finding that the cessation pharmacotherapies most commonly prescribed to Veterans undergoing LDCT were the least effective ones, the lack of association between receipt of treatment and long-term cessation may be due to gaps in connecting patients with the most effective treatment options, such as combination NRT. This suggests a need to examine how cessation support is being provided and to improve intervention effectiveness for this population. Screening recipients who are younger, married, have fewer physical health problems but greater mental health problems, and who have LungRADS scores < 4 may be particularly in need of additional quit support.

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Paper Session 24

4:30 PM-4:45 PM

GUIDED IMAGERY FOR SMOKING CESSATION: IDENTIFYING KEY THEMES IN GUIDED IMAGERY SCRIPTS DEVELOPED BY SMOKERS WHO WANT TO QUIT

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Guided imagery is an enhanced visualization technique intended to help individuals achieve desired goals and outcomes, and evidence supports its use for smoking cessation. The use of guided imagery for tobacco cessation involves a collaborative approach between coaches and smokers to develop written scripts for smokers to use in the process of quitting. While evidence supports a tailored approach for guided imagery script development, identifying common themes across smoker-developed scripts could provide a more efficient and standardized approach to delivery. A novel, scalable method for delivering guided imagery interventions is via a telephone quitline model. In a recently completed trial, we developed and tested a telephone-based guided imagery smoking cessation program. Participants in the trial were recruited through a statewide quitline or community-based methods and then randomized to a guided imagery Intervention Condition (IC; n=56) or active behavioral Control Condition (CC; n=49). In the IC, the coach and participant collaboratively created guided imagery scripts which were then delivered by email as audio files for participants to practice between coaching sessions. The transcribed scripts of the 56 IC participants (64.2% female; mean age=49.6) were coded by members of the study team and analyzed using the constant comparison approach. The major purposes of each coaching session, as per the published protocol, were used as a framework to guide our analyses. Major themes included: 1) reasons and benefits of quitting (e.g., health, family); 2) identification of coping strategies for triggers (e.g., avoidance, exercise); 3) coping with cravings and withdrawal (e.g., accepting that craving will go away); 4) preparing to quit (e.g., preparing to be smoke-free); and 5) relapse prevention (e.g., living life smoke-free.). Exemplars of each theme will be reported. A more nuanced analysis of the scripts revealed themes that reflected cognitive (routine, habits, and changes in behavior), motivational (emotionally laden terms and confidence or self-efficacy messages) and future-focused thinking. These “higher-order” imagery themes align with previous cross-sectional and health behavior change trials. Results of the script analysis suggest ways to refine and standardize the GI scripts which could assist in the development of a smoking cessation script library and more rigorous efficacy testing using this cognitive technique.

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Paper Session 25

3:30 PM-3:45 PM

ADAPTIVE GAMESQUAD: A NOVEL PHYSICAL ACTIVITY AND VIRTUAL HEALTH COACHING INTERVENTION FOR YOUTH WITH MENTAL HEALTH CHALLENGES

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Background: Youth with mental health diagnoses (MHD) are at increased risk of unhealthy lifestyle behaviors such as low physical activity (PA), poor diet and sleep, and excessive screen use, contributing to elevated rates of overweight and chronic diseases. They also face barriers to participation in lifestyle/behavioral interventions due to depleted familial resources and competing treatment priorities. This study translated an existing, home-based exergaming and telehealth coaching program developed for youth with overweight/obesity (GameSquad) for use among youth with MHD. We assessed intervention feasibility, engagement, and changes in pre/post moderate-to-vigorous PA (MVPA).

Methods: Participants were recruited from special education and clinic settings and randomized to receive a 10-wk intervention or waitlist control. Intervention participants received an Xbox, 3 exergames, a Fitbit, and a challenge booklet prescribing 3 exergame challenges/wk. Up to 6 coaching sessions were conducted virtually through the Xbox with both child and parent present. Coaches helped participants set PA goals and provided education on nutrition, sleep hygiene and screen use. Process data including coaching and exergaming session participation and engagement were collected via REDCap and Fitbit downloads. 7-days of MVPA data pre and post the 10-week intervention were collected via Actigraph.

Results: Twenty-three participants (mean age 14.8 y, 82.6% male) were consented/assented (n=11 intervention, n=12 control). Equipment was successfully installed and utilized by all intervention participants, who averaged 5 of 6 planned coaching sessions. Including 4 who discontinued exergaming by week 5, participants completed 50% of planned exergame sessions and averaged 104.8 (+/- 72.6) min/wk of exergaming. Intervention participants decreased their daily MVPA less than control participants after the 10-week intervention (2.02 vs. 8.12 min/day, p=0.42). Technology challenges and lack of interest in exergames were the most commonly cited reasons for not completing planned exergame sessions. A majority (67%) reported enjoying coaching sessions and receiving useful healthy living tips.

Conclusions: Adaptive GameSquad is a feasible and promising intervention to improve PA and health knowledge among youth with MHD. Participants successfully engaged in virtual health coaching sessions. More game choices and better technology integration would likely improve PA engagement.

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Paper Session 25

3:45 PM-4:00 PM

YOUTH AND YOUNG ADULT SUICIDE: DO STATES WITH GREATER BEHAVIORAL HEALTH TREATMENT CAPACITY HAVE LOWER SUICIDE RATES

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Background: Suicide is the second leading cause of death among youth and young adults. Significant risk factors for suicide include having a mood disorder such as depression, or a substance use disorder, or having firearms available and keeping them in the home. The aim of this study was to evaluate whether states with greater behavioral health treatment capacity have lower suicide rates among youth and young adults, compared with states having less treatment capacity.

Methods: We conducted a state-level time series cross sectional analysis (n=126), representing 45 states over 3 years, 2005, 2010 and 2015 (5 states had too few cases to warrant analysis). The outcome variable was the annual firearm suicides per 100,000 persons age 1-24. Two explanatory variables representing behavioral health treatment capacity were analyzed: 1) annual behavioral health workforce size (ABHW), and 2) number of facilities offering intensive outpatient substance use treatment (OSUT). Covariates included in the analysis were state population, %nonwhite, %male, unemployment rate, and number of FBI background checks, which served as a proxy for gun availability. Multivariable fixed-effects linear regression models were used to examine the association between the two explanatory variables and the suicide rate. The suicide rate and the explanatory variables were specified in log form, so the estimates can be interpreted as elasticities (% changes).

Results: The mean annual suicide rate increased by 25.4% from the 2005 mean rate of 2.95 suicides per 100,000. States with the highest suicide rates included Alaska, Montana and Wyoming. States with the lowest rates included Maryland, New Jersey and New York. On average, for every 10% increase in a state's ABHW, the suicide rate among youth and young adults decreased by 1.9% (p=.003). A similar estimate and significance level was found for the second explanatory variable representing OSUT.

Conclusion: There appears to be a small but statistically significant effect of behavioral health treatment capacity on the suicide rate for youth and young adults. There are many compelling reasons to increase access to mental health treatment and substance use treatment, but increasing that access is likely to have only a small effect on the major public health problem of youth suicide. Attention should focus on enacting appropriate policies to promote gun safety and limit the availability of guns. In addition, pediatricians and other physicians and clinicians should be encouraged to perform appropriate screening and assessment to identify youth and young adults who may be at risk for attempting suicide; and the medical community, more generally, should be encouraged to initiate advocacy activities to promote sensible, evidence-based policies to improve gun safety and limit gun availability.

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Paper Session 25

4:00 PM–4:15 PM

AMIGAS LATINAS MOTIVANDO EL ALMA (ALMA): AN INTERVENTION TO REDUCE STRESS, DEPRESSION AND ANXIETY AMONG LATINA IMMIGRANT WOMEN

India Ornelas, PhD¹, Georgina Perez, MSW¹, Serena Maurer, PhD¹, Daron Ryan, MPH¹, Cynthia J. Price, PhD¹, Deepa Rao, PhD¹¹University of Washington, Seattle, WA

Background: Latina immigrant women are at increased risk for depression and anxiety due to the social, political and economic stressors that shape their lives in the United States. They also face many barriers to access mental health care, including lack of health insurance, language barriers, and stigma. Amigas Latinas Motivando el Alma (ALMA) is a community-based intervention designed to reduce symptoms of stress, depression and anxiety among Latina immigrant women and address known barriers to care.

Methods: The ALMA intervention was developed based on previous formative research, stress and coping theory, and existing evidence-based strategies. The intervention is currently being tested in a delayed intervention control trial (N = 200) in three community sites. Participants complete surveys at four time points to assess outcomes, including measures that assess their satisfaction with the program.

Results: The program aims to: (1) help women identify positive coping strategies they are already using to manage stress; (2) introduce new coping strategies (e.g. mindfulness techniques, body awareness, and social support); and, (3) provide resources for additional mental health support if needed. The 8-week intervention has been delivered at two community-based organizations, perceived as safe and welcoming environments. The sessions are co-led by instructors with expertise in social work, mindfulness and yoga. Average program attendance is 18 participants at each session, 66% of those initially recruited. Preliminary analyses (N = 43) suggest that women have high levels of satisfaction with the intervention. All participants receiving the program indicated that they would recommend it to others. Almost all participants reported that it helped them reduce stress, feel less isolated and improved their mental health.

Conclusions: Community-based mental health programs have potential to reach Latina immigrant women who might not otherwise seek mental health services. Future studies should assess the efficacy of these approaches.

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Paper Session 25

4:15 PM–4:30 PM

TRAUMA EXPOSURE AND RATES OF ARREST IN AN URBAN SAMPLE OF PREGNANT WOMEN

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Background: Women of the childbearing age make up the largest portion of the female justice-involved population, with approximately 3–5% entering a correctional setting pregnant. In addition, justice-involved women have significant histories of mental health conditions and trauma exposure. Conditions both known to impact rates of justice involvement.

Purpose: To describe associations between trauma exposure and trauma related psychopathology in pregnant, low socioeconomic status women who report justice involvement.

Methods: Pregnant women were randomly recruited from primary care and obstetric/gynecologic clinics at an inner-city medical center. Eligibility requirements included ability to give informed consent, have a working phone number, between the ages of 18–65, and ability to speak and read English. Participants completed a demographic form, and surveys including: Traumatic Events Inventory (TEI), Childhood Trauma Questionnaire-Short Form (CTQ-SF), Modified PTSD Symptom Scale (MPSS), and the Beck Depression Inventory (BDI). Participants were compensated \$15 for participating. Findings: Participants included 794 pregnant women. The mean age of participants was 25.8 + 5.7 years old, 39.3% had completed 12th grade, 21.5% had some college or technical school; 65.8% were unemployed. Only 9.1% of the sample reported a history of hospitalization for psychiatric reasons, and 11.5% reported a previous suicide attempt. Arrest was prevalent in the sample with 41.3% reporting at least one arrest. Statistical analysis indicated exposure to more types of childhood trauma was significantly associated with Post Traumatic Stress Disorder ($p < 0.001$), major depressive disorders MDD as adults ($p < 0.001$); additionally, a diagnosis of both PTSD ($p < 0.001$) and MDD ($p < 0.001$) was associated with increased rates of arrest. Childhood trauma exposure was significantly associated with increased rates of arrest ($p < 0.001$), while adult trauma was not significantly associated with arrest ($p = .229$).

Conclusions: Screening pregnant women in the prenatal care setting for trauma exposure and psychopathologies has the potential to identify women at higher risk for involvement in the justice system, to address mental health conditions and develop plans of care that potentially reduce involvement in the justice system.

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Paper Session 25

4:30 PM-4:45 PM

CARE HEAD INJURY RACK CARD: DEVELOPED FOR ADVOCATES SERVING DOMESTIC VIOLENCE SURVIVORS WITH APPLICATION IN HEALTH SETTINGS

Julianna M. Nemeth, PhD¹¹The Ohio State University, Columbus, OH

Background: Head trauma and strangulation are common among domestic violence (DV) survivors. In Ohio, our research has documented that 81% of domestic violence survivors accessing advocacy services have experienced direct blows to the head, while 83% report strangulation. Until the CARE project, no tools existed to facilitate conversations with survivors about the health impact of such exposures.

Methods: In partnership with Ohio State University (OSU), the Ohio Domestic Violence Network (ODVN) secured a federal grant (2016-2019) to create and evaluate CARE (Connect, Acknowledge, Respond, Evaluate). Needs assessment focus groups at advocacy organizations serving DV survivors led to the development of CARE advocacy tools, including the Head Injury Rack Card (download at www.odvncares.org). Process evaluation focus groups (n=62) and outcome evaluation surveys (n=61) were completed by staff at DV organizations to facilitate our understanding of the impact of CARE on advocacy practice.

Process Evaluation Results: Staff cited widespread use of the CARE Head Injury Rack Card and reported the card normalized head injury among DV survivors and facilitated conversations about the impact of exposure on functioning. Advocates are not only using this tool, but also have shared and recommend its use in other settings: criminal justice (e.g. police, courts, jail), health (e.g. ERs, drug or mental health treatment), and service (e.g. children and job and family services, schools). One administrator noted, “The doctor in the ER called me and said he was very impressed with it. Because he...didn’t think he would look for those signs had she not taken that card with her.”

Outcome Evaluation Results: 62% of advocates reported using the CARE Head Injury Rack Card with survivors. Since participating in CARE, 68% and 58% of staff reported talking to survivors more often, 74% and 69% reported more comfort, and 73% and 67% reported more confidence in speaking with survivors about the potential impact of being hit in the head or strangled, respectively.

Discussion: 1 in 4 women will experience DV. The head and neck are the most common places targeted by perpetrators. The CARE Head Injury Rack Card could help transform the identification of the potential presence of traumatic and anoxic-hypoxic brain injury among DV survivors.

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Thursday

April 2nd, 2020

6:15 PM-7:30 PM

B101

6:15 PM-7:30 PM

FEASIBILITY STUDY OF A BRAIN TRAINING PROGRAM IN SENIOR CENTER

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Background: The number of Americans 65 and older is expected to more than double in the next forty years, expanding to 88.5 million by 2060. Along with growth in the older adult population, there will be increases in the numbers of individuals with cognitive deficits. Therefore, it will be important to investigate programs that have the potential to delay the decline in cognition through brain stimulating activities.

Methods: An 8 week community-based brain training program was piloted with the goal to provide education about memory loss, to build cognition, stimulating peer support, and to provide skill building, and mentally challenging activities. During each 90 minute session, 10 independently living older adults were engaged in warm-up activities; such as word searches, crosswords, or trivia style games; followed by information and discussion about a particular artist (music or visual) or part of history, and completed an art project circling around the theme. These participants were mostly White/Caucasian (80%), female (90%), retired (80%) with a mean age of 70.5 (+7.5) years of age. All of the participants had a high school education or higher, with the majority (50%) completing some college.

Results: Pre and post program assessments of quality of life and cognition (SLUMS) showed significant improvements in SLUMS ($p < 0.001$). There were significant relationships between age and quality of life ($p < 0.05$), SLUMS and attendance ($p < 0.05$) and SLUMS and quality of life ($p < 0.05$).

Conclusions: The results of this feasibility study suggest that it is possible that brain training can engage older adults and may help to maintain cognition, with the potential to delay the decline of cognition. Overall, as aging progresses, cognitive declines become more prevalent. Therefore, proper brain stimulation programs implemented in independent living populations at risk for cognitive decline may delay the onset or progression of these aging diseases.

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UNDERSTANDING ECOLOGICAL CONTRIBUTORS TO PHYSICAL INACTIVITY FACED BY RURAL AMERICAN INDIAN AND ALASKA NATIVE OLDER ADULTS

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Introduction: American Indian and Alaska Native (AIAN) adults, who are aging in some of the most under-resourced, remote communities in the U.S., experience environmental and social barriers to engaging in physical activity (PA), a key determinant of healthy aging. AIAN older adults face pronounced health disparities including higher rates of poverty, chronic disease, disability, and all-cause mortality. Increasing PA to support healthy aging is extremely relevant for rural AIAN older adults given greater health risks and fewer services. Tailoring PA interventions to fit within the geographic- and social- context for rural AIAN seniors is critical to assuring their reach, adoption and sustainability.

Methods: We used multi-phased, community-engaged methods to (1) develop partnerships with AIAN communities in rural northwest U.S.; and (2) involve AIAN older adults in data collection to understand physical, social and cultural environmental supports and barriers to PA. Phase 1 methods followed recommendations for research with AIAN communities, including cultural training for investigators; hiring local staff to build research capacity; forming a community advisory board to align project activities with community priorities; and using formative research strategies such as listening sessions and interactive presentations. Phase 2 methods will include AIAN adults ages 55+, who will complete qualitative interviews and quantitative surveys to characterize social, cultural, and environmental factors that influence inactivity and PA. Our goal is to increase access to PA opportunities for AIAN older adults.

Results: Phase 1 findings from community sessions identified chronic disease-related supports (i.e., increased motivation for PA following diagnosis) and barriers to PA participation (i.e., inadequate outreach to involve older adults in multigenerational activities, few organized PA programs, and limited transportation). Phase 2 builds on these findings; themes of PA barriers and enablers across ecologic levels from 20 rural AIAN older adults will be presented, along with recommended strategies to increase PA opportunities.

Impact: Community-engaged methods used during formative and intervention development phases of research assure inclusion of diverse aging populations in public health efforts. Knowledge of social-ecological determinants of PA will inform implementation and intervention strategies that will reduce disparities and promote healthy aging.

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PSYCHO-EMOTIONAL EFFECTS OF CHINESE CALLIGRAPHY HANDWRITING (CCH) INTERVENTION IN PERSONS WITH MILD COGNITIVE IMPAIRMENT

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Background: Past research has shown that training by Chinese calligraphy handwriting (CCH) improves one's general cognitive functions, the cognitive abilities of people with mild cognitive impairment (MCI), improved spatial ability and picture memory of Alzheimer patients as well as a clinical case involving guided finger writing which caused a coma patient to have awakened after 10 years of unconsciousness. One common feature in the above studies was the use of distinctive visual-spatial properties of Chinese characters construction, i.e. the visual geometric properties of angularity, closure, symmetry and parallelism, that contributed to the subjects' perceptual and cognitive facilitation.

Objectives: No studies have examined the effects of calligraphy training with such geometric properties in the emotional and relaxation states of the normal or clinical patient groups. This pilot study tested this relationship among people with MCI.

Methods: A single-blind, randomized controlled trial was carried out in a sample of 23 participants aged 65-80 with Mini-Mental Status Examination (MMSE) scores at 24-27. Group 1 (N=11, high geometric characters) and Group 2 (N=12, low geometric characters) were trained for 8 sessions of brush writing, each lasting 50 minutes with one session per week for 8 consecutive weeks. We used the General Health Questionnaire (GHQ) as the psycho-emotional measures respectively before and after the whole treatment.

Results: The pre-post GHQ total scores showed a marginally significant result in favor of Group 1 ($p=0.08$), but no effect for Group 2. The pre-post difference of GHQ Anxiety sub-scores revealed a significant score reduction in Group 1 ($p=0.05$), but not in Group 2. A further comparison in the pre-post score difference between Groups 1 and 2 reached also marginally significant ($p=0.07$) in GHQ total scores and significant ($p=0.04$) in GHQ Anxiety sub-scores.

Discussion: The previous successful reduction of anxiety states by calligraphy treatment has been recorded mainly in the use of general (geometric and non-geometric mixed) writing characters. This study is to clarify the influence that geometric properties count for. The overall findings mark a modest beginning on advancing CCH loaded with geometric properties as an effective treatment to reduce anxiety. The findings have implications for developing similar geometric writing characters for treating anxiety disorders, stress-related and other psycho-emotional conditions.

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DESIGNING A BEHAVIORAL INTERVENTION FOR AFRICAN AMERICANS WITH MILD COGNITIVE IMPAIRMENT AND HYPERTENSION

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Uncontrolled hypertension (HTN) is a major risk factor for developing cognitive decline, Alzheimer's disease and related dementia disorders (ADRD). New guidelines for HTN management designate a systolic blood pressure < 130, but many African Americans with HTN do not achieve this target. The purpose of this pilot study protocol is to deliver a novel intervention, combining Mindfulness in Motion[®] and the Dietary Approaches to Stop Hypertension (DASH), to improve blood pressure self-care in African American (AA) older adults with mild cognitive impairment (MCI) and HTN. AAs aged 65 and older were randomized to mindfulness plus DASH, attention control (non-health related education delivered in 8-weekly group sessions) or control group (DASH diet pamphlet only). The Mindfulness in Motion (MIM) plus DASH intervention is delivered in 8-weekly group sessions of 6-10 participants. MIM includes mindful movements from chair/standing, breathing exercises and guided meditation. The DASH intervention uses a critical thinking approach that involves problem solving, goal setting, reflection, and developing self-efficacy. Both components are culturally tailored for older African Americans. Cognitive examination, diet and mindfulness practice surveys, and blood pressure are collected at baseline and 3 months. Seventy-five African Americans were screened and 38 were enrolled (women= 22; men= 7) and randomized to MIM DASH (n=13) attention control (n= 13) and control (n=12). Cohort I (n= 18) completed the study in June, 2019 and cohort II (n=20) will complete the study in November, 2019. Findings from this pilot study may provide the preliminary evidence that MIM plus DASH may improve blood pressure self-care in African Americans with MCI and HTN.

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THE ASSOCIATION BETWEEN HERPESVIRUS REACTIVATION AND EXECUTIVE FUNCTIONING AMONG HEALTHY MIDDLE-AGED ADULTS

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For many years, herpesviruses have been hypothesized to be associated with cognitive decline because they create life-long infections within neuronal cells in areas that are typically altered among those with Alzheimer's disease (AD). Previous work has demonstrated that those with AD and mild cognitive impairment (MCI) have greater herpesvirus reactivation (i.e., antibody titers) than healthy controls (Mancuso et al, 2014). Such findings suggest that poor immune control of the herpesvirus may contribute to cognitive decline; however, little is known about how herpesviruses may be associated with cognitive performance among healthy individuals. This is an important gap in the literature given that other forms of immune dysregulation (e.g., inflammation) are known to be associated with executive functioning (e.g., Wersching et al., 2010). In the present study, we examined the association between Epstein - Barr virus (EBV) antibody titers and performance on measures of executive functioning among a sample of 60 healthy and middle-aged adults ($M_{age} = 61.08$, $SD = 5.96$; 78.3% female) living in or near State College, PA. Each participant visit began at 8:00 am. After establishing informed consent, a phlebotomist engaged in a blood draw prior to participants completing a battery of neuropsychological tests. Measures of executive functioning included the Color-Word Interference Test to measure Inhibition (Delis, Kaplan, & Kramer, 2001), the Digit Span task to measure Updating/Monitoring (Wechsler, 2008), and the Wisconsin Card Sorting Test to measure Cognitive Flexibility (Heaton & PAR Staff, 2003). EBV antibody titers were measured by Microgen Laboratories via a standard protocol (Stowe, Ruiz, Fagundes, Stowe, Min, & Glaser, 2014). Results indicated that greater EBV antibody titers were associated with poorer inhibition ($r = -.38$, $p < .01$) and cognitive flexibility ($r = -.39$, $p < .01$). The association between EBV antibody titers and updating/monitoring was not significant ($r = -.16$, $p = .21$). These findings suggest that EBV reactivation may be associated with cognitive performance, even among healthy individuals. Therefore, herpesviruses may impact cognitive performance prior to the presentation symptoms of AD or MCI. Findings may also suggest that EBV reactivation could be an early indicator of AD/MCI risk, and thereby provide opportunities for early intervention; however, longitudinal research is clearly needed to test this possibility.

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DEVELOPMENT OF A PROGNOSTIC AWARENESS QUESTIONNAIRE (PAQ) FOR PATIENTS WITH ADVANCED CANCER

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Background: Patients' perception of their prognosis plays an important role in their treatment decision-making in advanced cancer. However, no reliable, valid instruments currently exist to measure prognostic awareness comprehensively in patients with cancer.

Methods: We developed the PAQ using a sequential two-phase qualitative approach. During phase 1, we conducted five working groups with a transdisciplinary team of clinicians and researchers from oncology (n=2), psychology (n=2), psychiatry (n=1), and palliative care (n=3), as well as a survey development expert (n=1) to identify key domains of the PAQ. Using prior literature and consensus-driven process, the team then generated an item bank for each domain. During the second phase, we conducted cognitive interviews with 39 patients with advanced cancer to assess if the PAQ items are understandable, answerable, and interpretable as intended.

Results: The working groups identified the following domains that are critical to measure prognostic awareness: 1) cognitive understanding of prognosis (ability to understand goals of treatment and acknowledge the life-limiting illness), 2) emotional coping (capacity to process prognostic uncertainty and terminal prognosis), and 3) adaptive response (capacity to use prognostic awareness to inform life decisions). Data from cognitive interviews revealed that patients had an accurate understanding of the meaning of most PAQ items. Patients reported difficulty with binary response options for questions pertaining to coping with prognosis. They also expressed emotional difficulty answering numerous questions regarding their cognitive understanding of their prognosis. Some patients also reported the need to clarify the meaning of certain words such as 'cure' and 'prognosis.' We revised the PAQ items based on these findings by 1) replacing binary response options with agreement scales; 2) reducing the number of items focused on cognitive understanding of prognosis; and 3) defining 'cure' and 'prognosis' in the introduction to the PAQ.

Conclusion: We identified a novel conceptual framework to capture the complexity of prognostic awareness in developing the PAQ. We revised the PAQ based on cognitive interviews with patients with advanced cancer to ensure its content validity and readability. Future work should focus on further validating the PAQ by testing its psychometric properties including reliability and construct validity.

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EHR-BASED PATIENT REPORTED OUTCOMES (PRO) SYMPTOM AND NEEDS MONITORING IN AMBULATORY ONCOLOGY: THE UHEALTH PRO PROGRAM

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Background: There is growing interest in the inclusion of systematic monitoring of patient symptoms and practical and nutritional needs to deliver value-based care in ambulatory oncology settings. Routine monitoring that is integrated in the patient portal and connects in real-time with the electronic health record (EHR) can inform clinical care delivery and can improve patient engagement, as well as patient and system-level outcomes.

Methods: A concurrent mixed methods approach was used to assess initial acceptability and uptake of the UHealth PRO Program. We conducted a qualitative analysis of transcripts from a focus group among a patient advisory board (n=7). Additionally, 310 patients were assigned assessments from August–November 2019 through the EHR patient portal, which included PROMIS® computer adaptive tests (CATs) for anxiety, depression, fatigue, pain interference and physical function, selected items from the PRO-CTCAE to assess toxicities, the FACT-G7 to measure QOL, and a practical needs and nutritional needs checklist. Results were populated and alerts for scores above clinical thresholds for physical symptoms, depression, anxiety, and endorsed practical and nutritional needs were received by medical teams, social work or nutritionists, respectively.

Results: Qualitative data analysis from the focus group revealed five overarching themes which included: previous experience with the patient portal; usability and ability to navigate the patient portal and questionnaires; acceptability and functionality of questionnaires; and content-related suggestions. Most participants had used the patient portal—MyUHealth Chart before, and thought it was easy to navigate. Participants agreed that the UHealth PRO Program initiative was useful but only if feedback and referrals were obtained on a timely manner by their providers. Most preferred to complete assessments prior to their visit. Addressing lack of support during their cancer care experience was identified as a major concern that can be addressed by UHealth PRO. Within the test clinic, 125 (40.3%) of patients completed the assessments, among whom 41.6% were completed at home via the patient portal and 58.4% were completed in-clinic via the intake nurse/clinic staff. Of the 163 alerts received, the majority were for nutritional needs (33%), followed closely by practical needs (22%) and emotional distress (19%).

Conclusions: While these results demonstrate acceptability and feasibility in implementing the program, initial uptake of an EHR-based symptom screening tool was modest. Future work should promote patient engagement and educational awareness of the benefits of systematic monitoring to improve uptake.

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EXPLORING CLINICIAN PERSPECTIVES ON HOSPITAL DISCHARGE PLANNING FOR PATIENTS WITH ADVANCED CANCER

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Background: Acute hospitalizations and readmissions post hospital discharge represent a large portion of health care utilization at the end of life for patients with advanced cancer. Studies exploring factors contributing to these burdensome transitions of care at the end of life are lacking in oncology. We aimed to examine clinicians' perspectives on factors relevant to discharge decision making for hospitalized patients with advanced cancer and their impact on burdensome transitions of care.

Methods: Using a semi-structured interview guide, we conducted in-depth interviews with 13 clinicians providing care to hospitalized patients with advanced cancer at an academic medical center. Interviews explored clinicians' experiences with discharge planning for hospitalized patients with advanced cancer and their perspectives on factors contributing to prolonged hospitalizations, suboptimal discharge, and potentially burdensome transitions of care. We audio-recorded the interviews and transcribed them. Two study team members iteratively coded the transcript data and identified major themes, using a content analysis approach with attention to discrepant or unexpected data.

Results: We conducted interviews with thirteen clinicians including oncologists (n=4), case managers (n=2), social workers (n=2), physical therapists (n=2), and nurses (n=3). Across disciplines, participants cited inadequate communication between clinicians, the patient, and their families as a major barrier to adequate discharge planning. Lack of proactive planning for patients' discharge needs such as the need for intravenous medications or post-discharge services frequently resulted in delay in discharge. Ambiguous goals of care in patients with a limited prognosis and lack of timely communication of these goals between the inpatient team and the outpatient oncologist often resulted in impractical and suboptimal discharge plans. Many clinicians also perceived inadequate patient and family preparations and education regarding their post-discharge needs as a major contributor to hospital readmissions.

Conclusions: These findings highlight several gaps in timely communication between inpatient and outpatient clinicians, patients, and families, as major contributors to burdensome transitions of care at the end of life for patients with advanced cancer. Interventions to facilitate timely communication regarding discharge expectations, discharge needs, and goals-of-care between clinicians, patients, and families are needed.

Learning

Objective: To identify factors contributing to burdensome transitions of care at the end of life for hospitalized patients with advanced cancer in order to inform future interventions to improve their quality of end-of-life care.

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FEAR OF CANCER RECURRENCE AND SLEEP IN COUPLES AT THE FIRST POST-TREATMENT MAMMOGRAM FOR EARLY-STAGE BREAST CANCER

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Background: Sleep is a well-documented determinant of health in both the general population as well as in cancer survivors. While sleep disturbance is common in cancer survivors, its prevalence is greatest in individuals with breast cancer (BC). As such, it is critical to understand factors that underlie impaired sleep in these individuals. Few studies have examined a putative link between fear of cancer recurrence (FCR) and sleep disturbance in BC survivors. Moreover, research has not focused on the link between sleep and FCR among spouses of BC survivors. It also may be of particular interest to examine the relationship between FCR and sleep disturbance as couples enter potentially threatening phases of the survivorship trajectory, such as the first post-treatment mammogram (MMG).

Purpose: The present study examined the relationship between FCR and sleep disturbance in early-stage BC survivors and their spouses in the period surrounding survivors' first post-treatment MMG. Associations were examined between FCR and both daily sleep across the diary period as well as solely on the eve of the MMG, when FCR may be at its peak. Higher survivor and spouse FCR were hypothesized to predict reduced sleep quantity and quality and greater sleep onset latency (difficulty falling asleep) and wake after sleep onset for both themselves and their partners.

Methods: Couples coping with early-stage BC (N=57) reported sleep duration, quality, sleep onset latency, and wake after sleep onset each morning for 21 consecutive days spanning survivors' first post-treatment MMG. Three validated measures of global FCR were used to form latent survivor and spouse FCR factors. Average daily sleep outcomes as well as sleep on the eve of the MMG were regressed on both survivor and spouse FCR. Actor-partner interdependence modeling was used wherein associations between one participant's FCR and his/her own sleep (actor effects) and with his/her partner's sleep (partner effects) were estimated simultaneously in each model.

Results: Survivor FCR was associated with reduced average daily sleep duration and quality for themselves as well as reduced average sleep quality and greater average sleep onset latency for their spouse. Spouse FCR was associated with reduced average daily sleep duration for themselves. On the eve of the MMG, survivor FCR was associated with their own reduced sleep duration and quality as well as greater sleep onset latency for their spouse. Spouse FCR was associated with their own reduced sleep duration and quality as well as greater sleep onset latency and wake after sleep onset for their partner.

Conclusions: Findings supported individual and dyadic associations between FCR and sleep, addressing gaps in knowledge on FCR and health behaviors. FCR interventions may be a strategy for addressing sleep disturbance, and thereby long-term health for both BC survivors and their non-patient partners.

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EVALUATING THE IMPACT OF DEPRESSION FUNCTIONAL LIMITATION AND SELF-RATED HEALTH ON SURVIVAL TIMES AMONG BREAST CANCER PATIENTS

Oluwaseun J. Adeyemi, MBChB, MPH, MWACS¹, Tasha L. Gill, MPH¹, Rajib Paul, PhD¹, Larissa Brunner Huber, PhD¹¹University of North Carolina at Charlotte, Charlotte, NC**Background:** Depression, functional limitations, and health status can create additional complexities in patients already diagnosed with breast cancer and thus shorten the survival time of these patients.**Purpose:** This study aims to assess the joint impact of self-reported depression, functional limitation, and self-rated health on survival times among breast cancer patients.**Methods:** Seventeen-year data from the Integrated Public Use Microdata Series - National Health Interview Survey (IPUMS-NHIS) were pooled and analyzed. Women who were ≥ 30 years old, diagnosed with cancer as an adult (i.e. ≥ 18 years), and who were interviewed within five years of diagnosis were included ($n=2,704$). The outcome variable was time to death. We computed hazard ratios (HR) using Cox-Proportional regression with symptoms of depression, self-rated health, and functional limitation from breast cancer as independent variables. Sociodemographic characteristics were included as potential confounders.**Results:** Age, race, educational attainment, marital status, and the poverty-income ratio were significantly associated with survival times of women with breast cancer ($p < 0.001$). Women with breast cancer who reported symptoms of depression had 17% (HR: 1.17; 95% CI: 1.00-1.37), and 19% (HR: 1.19; 95% CI: 1.00-1.37) increased risks of mortality in the unadjusted and adjusted models, respectively. Women with breast cancer who rated their health as poor had a 2-fold statistically significant increased risk of mortality (Adjusted HR: 2.01; 95% CI: 1.59-2.53) as compared to women with good to excellent health status. Similarly, women with breast cancer who rated their health as fair had nearly 1.5 times the risk of mortality compared to women who rated their health as good to excellent (Adjusted HR: 1.45; 95% CI: 1.20-1.75). Further, women with functional limitations from breast cancer had a 42% increased risk of mortality compared to women who did not report any functional limitation from breast cancer (Adjusted HR: 1.42; 95% CI: 1.16-1.72). This finding was also statistically significant.**Conclusions:** Symptoms of depression, fair and poor self-rated health and functional limitations from breast cancer significantly shorten the survival times of breast cancer patients. A holistic approach to treatment that includes mental health therapy and assistance with functional ability may be beneficial in improving quality of life and reducing mortality risks among these patients.

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FACTORS ASSOCIATED WITH SOCIAL FUNCTIONING AMONG YOUNG ADULT CANCER SURVIVORS AFTER HEMATOPOIETIC CELL TRANSPLANTATION

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EFFECTS OF THE PRESENCE OF A COMPANION ON ENCOUNTERS BETWEEN BLACK CANCER PATIENTS AND THEIR NON-BLACK ONCOLOGISTS

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Background: Research has demonstrated that the presence of a family caregiver or other companion during a patient's medical encounter can influence the dynamics and oncologist perceptions of the encounter. Most prior studies have focused on non-Hispanic white patients; however, patient-provider interactions are affected by race, with poorer communication in racially-discordant interactions—particularly between Black patients and non-Black providers. This study aimed to examine the effects of the presence of a companion on encounters between Black patients and their non-Black oncologists.

Method: Data were collected as part of a larger intervention study conducted by Eggly et al. (2017). Participants were 115 Black cancer patients (93% female; 88% breast cancer) who had a video-recorded clinical encounter with one of 20 participating non-Black oncologists. Of these patients, 47% ($n=54$) had a companion present. Encounters were observed and coded for patient active participation, physician patient-centered communication, and encounter length. After the encounter, patients reported their perceptions of the treatment recommended by the oncologist, and oncologists reported their perceptions of the patient. To account for the nested nature of the data (patients within oncologists), multi-level models were conducted in which the presence or absence of companions predicted patient and oncologist behaviors and perceptions, as well as length of encounter, controlling for study intervention arm.

Results: Oncologists spent more time with accompanied patients ($B=5.52$, $p=.016$), used more patient-centered communication with them ($B=0.18$, $p=.037$), and perceived them as having more social support ($B=0.73$, $p<.001$) compared to unaccompanied patients. While observers did not rate unaccompanied patients as participating more actively, physicians reported that accompanied patients asked more questions ($B=0.35$, $p=.031$). Patient perceptions of the treatment recommended by the oncologist did not differ based on the presence or absence of a companion.

Discussion: Results suggest that bringing a companion to appointments with a non-Black oncologist may be beneficial to Black patients; oncologists perceive these patients to be more activated and have greater social support, which could potentially influence treatment recommendations. Having a companion present was also associated with more patient-centered communication, which has previously been linked with improved outcomes.

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DOES SEXUAL DISRUPTION MEDIATE ASSOCIATIONS BETWEEN PERCEIVED COPING AND QUALITY OF LIFE IN BREAST & PROSTATE CANCER SURVIVORS?

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Background: Men with prostate cancer (PC) and women with breast cancer (BC) experience relationship challenges as a result of their treatment. Decrements in sexual functioning and quality of life (QOL) are well documented; however, limited work has evaluated whether illness-related sexual and intimacy disruption mediates the relationship between perceived coping and QOL in a relatively large and well characterized sample of PC and BC survivors.

Methods: PC ($n=260$) and BC ($n=179$; stages 1-2) survivors who were enrolled in stress management RCTs were assessed prior to randomization. The Psychosocial Adjustment to Illness Scale-Sexual Relationship subscale (PAIS) measured illness-related sexual and intimacy disruption, the Functional Assessment of Cancer Therapy-General (FACT-G) assessed QOL, and the Measure of Current Status (MOCS) captured perceived coping abilities. Differences between cancer groups were tested and followed by a Sobel test within each group to examine if illness-related sexual and intimacy dysfunction explains to association between perceived coping and QOL.

Results: PC survivors were older (PC $M=65.4$, $SD=7.6$; BC $M=50.2$, $SD=9.2$), further from diagnosis (PC $M=15.6$ mos, $SD=6.9$; BC $M=1.8$ mos, $SD=7.7$) and treatment (PC $M=10.3$ mos, $SD=4.5$; BC $M=0.8$ mos, $SD=0.8$), and reported greater QOL (PC $M=86.3$, $SD=14.2$; BC $M=80.2$, $SD=14.4$). BC survivors had greater annual income (MPC $M=51.0$, $SD=50.2$; BC $M=85.9$, $SD=74.2$), education (PC $M=13.8$ yrs, $SD=3.3$; BC $M=15.6$ yrs, $SD=2.5$), illness-related sexual/intimacy disruption (PC $M=13.5$, $SD=3.6$; BC $M=14.6$, $SD=1.6$) and coping ability (PC $M=62.9$, $SD=11.3$; BC $M=94.8$, $SD=12.9$). All p 's $< .05$. Greater perceived coping ability for BC and PC predicted greater QOL ($F(1,178)=46.9$, $p<.001$; $F(1, 259)=18.6$, $p<.001$). Illness-related sexual and intimacy disruption mediated the relationship between perceived coping and QOL for PC (Sobel test statistic=1.97, $SE=0.034$, $p=0.049$) but not for BC survivors (Sobel test statistic=.622, $SE=.01$, $p=0.53$).

Conclusions: Although women presented with greater sexual and intimacy disruption, this characteristic did not mediate the effects of perceived coping on QOL. For men, sexual and intimacy disruption did mediate the effects of coping on QOL. These differences could suggest that illness-related disruption applies differently within PC and BC. Interventions targeting the role of coping on sexual function and QOL may be more relevant in PC, and perceived coping may protect QOL through different pathways in BC.

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DISEASE-SPECIFIC AND GENERAL HEALTH-RELATED QUALITY OF LIFE PROFILES AMONG MEN WITH ADVANCED PROSTATE CANCER

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Background: Androgen-deprivation therapy is a common treatment for advance prostate cancer. Despite its effectiveness, androgen-deprivation therapy is associated with physical and psychological side effects that can negatively impact health-related quality of life (HRQOL). Limited work has described HRQOL profiles in advance prostate cancer patients on androgen-deprivation therapy. This study identified distinct HRQOL profiles among men with advance prostate cancer; and examined sociodemographic and psychosocial factors that may be associated with subgroup membership.

Methods: 192 men diagnosed with advanced prostate cancer (stage III/IV) who received androgen-deprivation therapy at least once within the past year participated in this study. Participants self-reported sociodemographic, mental and physical health characteristics (e.g. anxiety, depression, fatigue, comorbidities). Disease-specific HRQOL was assessed with the Expanded Prostate Index Composite measure; while general HRQOL was measured using the Functional Assessment of Cancer Therapy - General (FACT-G). We used a latent profile analysis (LPA) to identify subgroups of men with distinct disease-specific HRQOL profiles and relate these LPA groups to a diverse set of correlates. All analyses were conducted in Mplus (v.8.3).

Results: Overall, participants had a mean age 68.7 ± 0.6 years. The majority were married (67%), non-Hispanic white (56%), and retired (57%). We identified two distinct disease-specific HRQOL profiles: lower levels of the hormonal, bowel, sexual, and urinary disease-specific HRQOL domains (12%) vs. higher levels of disease-specific HRQOL domains (88%). Significant correlates of the identified low disease-specific HRQOL profile were age ($OR = 0.86$, $95\%CI = 0.78-0.94$), metastatic disease ($OR = 0.32$, $95\%CI = 0.07-1.08$), and active coping ($OR = 1.8$, $95\%CI = 1.27-2.56$). Compared to the high disease-specific HRQOL subgroup, men in the low disease-specific HRQOL subgroup were younger, poorer, unemployed, had more comorbidities, reported higher levels of anxiety, depression, stress, and fatigue. Additionally, men in the low disease-specific HRQOL reported lower levels of general HRQOL as evidenced by lower physical ($M = 18.2$ vs. 23.8), emotional ($M = 16.7$ vs. 20.7) and functional well-being ($M = 16.5$ vs. 20.9) (all p 's $< .05$).

Conclusions: These findings provide a greater understanding of determinants of poor disease-specific and general HRQOL in men with advanced prostate cancer on androgen-deprivation therapy. Our findings may contribute to developing health promotion programs that create more targeted/profile-based interventions. Further research is needed to assess longitudinal trajectories of these profiles and their impact on disease-specific and general HRQOL among this population.

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DIFFERENCES IN COPING AND APPRAISAL AMONG WOMEN WITH BREAST CANCER: A CLUSTER-ANALYTIC APPROACH

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Objectives: Despite research has established the role of coping strategies in the occurrence of posttraumatic growth (PTG), little is known about the ways in which different cancer patients may combine the use of several coping strategies in response to cancer impact appraisal. The aims of this study are to generate distinctive profiles of coping among women with breast cancer (BCa), and to test whether coping profiles are related to their psychological adjustment.

Methods: BCa survivors ($N = 322$; $M_{age} = 46.99$, $SD = 8.76$, range = 25-72) were assessed within four months post-surgery. The assessment battery included the Brief COPE, perceived cancer impact (sum score of threat, harm, disturbance, impact, control, challenge, and importance), the Hospital Anxiety and Depression Scale, the SF-36 Health Survey (quality of life; QoL), and the Affects Balance Scale (positive affect; PA).

Results: (Aim 1) five clusters of participants were identified. Women in cluster 1 (Fighting group; $n = 84$) demonstrated the highest level of all kinds of coping. Women in cluster 2 (Ms. 'Close Enough'; $n = 84$) reported averaged levels of all kinds of coping. Women in cluster 3 (Fatalism; $n = 29$) adopted relatively low levels of coping with the exception of greater use of acceptance coping. These three groups appraised cancer experience as highly impactful. Women in cluster 4 (Engagement group; $n = 95$) adopted high levels of self-sufficient coping. Women in cluster 5 (Low coping group; $n = 30$) reported the lowest coping efforts and perceived higher controllability of cancer. The latter two groups appraised cancer experience less impactful.

(Aim 2) We evaluated differences among clusters with respect to demographic characteristics and psychological adjustment. Cluster 1 and 4 reported highest PA and lowest depression, but cluster 1 reported greater anxiety and lower QoL than cluster 4. Cluster 5 was older in age compared with the others as well as lower anxiety and PA. Cluster 3 reported the greatest depression and anxiety and lowest QoL, followed by cluster 2.

Conclusions: Women with BCa can be classified in five groups according to the patterns of coping strategies and appraisal. Coping profiles were differentially related to psychological adjustment. Overall, these findings suggest that research should move from coping strategies to coping profiles in order to provide a deeper understanding of BCa adjustment.

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FACTOR STRUCTURE AND CONCURRENT VALIDITY OF THE POSTTRAUMATIC GROWTH INVENTORY AMONG TAIWANESE BREAST CANCER SURVIVORS

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Objectives: The first aim of this study is to determine the dimensions of the Posttraumatic Growth Inventory (PTGI) among Taiwanese cancer survivors. Through literature review, we examine whether the PTGI comprises a unitary dimension or five domains (Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation of Life), or four domains (Self, Spiritual, Life orientation, and Interpersonal). Second, if there is more than one dimension, we examine whether different psychosocial correlates, including cancer impact, psychological distress, and coping variables emerge when examining the subdomains of the PTGI.

Methods: Breast cancer survivors ($N = 354$; $M_{age} = 47.45$, $SD = 8.74$, range = 25–71) were enrolled one year after their surgery. They completed measures of perceived impact and challenge, the Brief COPE (self-sufficient, socially-supported, and avoidant coping), and the Hospital Anxiety and Depression Scale as well as the PTGI as part of a larger study on breast cancer adjustment. Confirmatory factor analyses were used to determine factor structure of the PTGI. Partial correlations controlling for age and education were adopted to examine psychosocial correlates of domains of PTGI.

Results: A 5 factors with 1 higher-order factor best fitted the data, indicating the PTGI was multidimensional as well as a general factor. We, then, explored the difference of the psychosocial correlates of the PTGI subdomains. Partial correlations revealed that self-sufficient coping was among the most significant correlates of all PTGI subdomains ($r = .51-.60$, $p < .001$), followed by socially-supported coping ($r = .31-.51$, $p < .001$). Moreover, specific correlates were found for each domain. Greater use of avoidant coping was associated with greater spiritual change ($r = .21$, $p < .001$). Greater perceived cancer challenge was associated with greater spiritual change ($r = .13$, $p < .05$). All domains but spiritual change were negatively associated with depressive symptoms ($r = -.15 - -.25$, $p < .05$). Anxiety was negatively associated with new possibility and appreciation of life ($r = .12$ and $.15$, $p < .05$).

Conclusions: While the PTGI can be understood as a unitary dimension, five facets each was associated with specific psychosocial correlates. Findings highlight a more complex model of PTG implicated in Taiwanese breast cancer survivors' experience of positive changes.

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DEVELOPMENT OF A NEW PATIENT REPORTED OUTCOME FOR DEPRESSION IN OLDER ADULTS WITH CANCER

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Background: Older adults with cancer (OACs) are less likely than any other age group to be appropriately diagnosed with depression, in part due to the overlap of depression criteria with cancer and treatment sequelae, the effects of physical aging, and the unique presentation of depression in older adults more broadly (i.e., absence of traditional mood symptoms). This multiphase measure development study sought to create a new patient reported outcome (PRO) to screen for depression in OACs.

Method: Phase 1 included qualitative interviews with experts in geriatric psychiatry in oncology ($N=8$) and depressed and non-depressed OACs ($N=26$; i.e., 70+) to develop a conceptual understanding of depression in this patient group based on a phenomenological qualitative approach. Thematic Content Analysis (TCA) of interview content by a trained coding team was utilized to generate candidate items for the new PRO. In Phase 2, these items underwent cognitive interviewing with OACs ($N=10$) to clarify wording, response options, formatting, and item selection. Phase 2 results were also synthesized and reviewed by a trained coding team.

Results: Phase 1 TCA results identified major and minor themes characterizing the prominent depressive symptoms experienced by OACs such as: anhedonia, reduction in social relationships, decreased meaning and purpose, lack of usefulness, feeling like a burden, and irritability. In Phase 2, cognitive interviewing revealed consistency among participant preferences. Participants preferred to have the scale instructions repeated within each item to increase recall ease, and the 5-response option format and length of the measure were acceptable. Consensus emerged for item preference as well. For example, participants preferred “the things I did were worthwhile” to “the things I did were valuable” and “I became irritated more easily” to “I was irritable.”

Conclusions: The phenomenology and component symptoms of depression in OACs diverges from the items that traditionally comprise self-report depression scales. Sole reliance on existing depression screening measures for OACs will continue to yield poor sensitivity and specificity, failing to identify OACs with clinically significant symptoms. This ongoing study will result in a new PRO that is uniquely suited for OACs. Phase 3 is underway and includes further refinement of the measure based on its preliminary psychometric properties and clinical utility.

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EFFECTS OF SOCIAL ISOLATION AND CONSTRAINTS ON PSYCHO-SOCIAL SYMPTOMS EXPERIENCED BY STEM CELL TRANSPLANT PATIENTS

Joseph Martinez, N/A¹, Taylor Schulte, n/a², Lauren A. Whitmore, MA³, Amanda Belanger, B.S.³, Christine M. Rini, PhD⁴, Kristi Graves, PhD⁵¹Cornell University, Yonkers, NY; ²Georgetown Lombardi Comprehensive Cancer Center, Cancer Prevention and Control Program, Washington, DC; ³Cancer Prevention and Control, John Theurer Cancer Center, Hackensack University Medical Center, Hackensack, NJ; ⁴Northwestern University Feinberg School of Medicine, Chicago, IL; ⁵Georgetown University, Washington, DC**Background:** Hematopoietic stem cell transplantation (HSCT) is a treatment for hematological malignancies and its use is expected to increase fivefold by 2030. We were interested in identifying specific factors that may be associated with depression and anxiety among patients with hematological malignancies prior to HSCT. Based on the critical role of caregivers for patients undergoing HSCT, we examined whether social isolation or social constraints were associated with anxiety or depression prior to transplant.**Methods:** The current research is part of a multisite randomized clinical trial evaluating the effects of expressive helping to reduce physical and emotional symptoms in HSCT patients. We collected data on social constraints, social isolation, anxiety (measured by the GAD-7) and depression (measured by the CES-D) before transplant, around the time of hospital admission. We analyzed our data using bivariate analysis and multivariate linear regression.**Results:** We recruited 95 adult cancer patients (45% women, mean age = 55.5 years (SD = 12.35 years)) prior to transplant. Results indicate that higher levels of social constraints were significantly associated with higher levels of both anxiety and depression ($p < .001$). Moreover, findings suggest higher social isolation was related to higher anxiety and depression ($p < .000$). Of note, 47% of participants reported experiencing severe levels of depression. Younger age was significantly associated with higher anxiety ($r = -.41$, $p = .000$) and higher depression ($r = -.27$, $p = .009$). After controlling for age and gender, social isolation remained significantly associated with depression ($B = 0.53$, $p = .000$); $R^2 = .35$, $F(3,91) = 15.92$, $p = .000$) and social constraints remained significantly associated with anxiety ($B = 0.32$, $p = .002$); $R^2 = .28$, $F(3,84) = 10.49$, $p = .000$).**Conclusion:** Individuals with strong social support, meaning low social constraints and low feelings of isolation, appear to have lower levels of anxiety and depression. HSCT is a physically and emotionally demanding treatment. Our findings suggest the importance of implementing interventions prior to and during transplant to aid in symptom management in this vulnerable patient population.

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MISPERCEPTION OF CANCER RISK AND ITS ASSOCIATION WITH INFORMATION SHARING MOTIVES AMONG WOMEN AT LOW RISK FOR BRCA MUTATIONS

Jingsong Zhao, MPH¹, Colleen M. McBride, PhD¹, Yue Guan, PhD, ScM, CGC¹¹Emory University, Atlanta, GA**Introduction:** The vast majority of women who complete family history screening will be at low risk for carrying a *BRCA1/2* mutation. Yet, whether women share this information with family members who could benefit is largely unknown. In this brief report, we explore whether women share information about being at low risk for *BRCA1/2* with others, and whether their level of understanding is associated with motives for sharing the result.**Methods:** We identified women in mammography clinics who completed a brief family history screen. Those screened as low risk for *BRCA1/2* mutations were asked to complete a one-time online survey between June 2016 and January 2017. The analyses of t-tests and chi-square tests were performed in 2019.**Results:** One-third (43/147) of women shared their low risk results with someone in their social network. The risk information was shared most often with a first-degree female relative to express feelings of relief (76%, 32/42). Women whose cancer risk perception was inconsistent with their screen result reported the most motives to share results with their relatives.**Conclusions:** The communication needs of women who are at low risk for carrying a *BRCA1/2* mutation, the majority of women screened, are underexplored. While these findings warrant replication, they suggest that women who misperceived their cancer risk may be most inclined to share their results with others, which may foster miscommunication in the broader family network.

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EFFECTS OF A SMARTPHONE-BASED INTERVENTION ON CANCER KNOWLEDGE AND COPING AMONG LATINA BREAST CANCER SURVIVORS

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Objective: Despite documented psychosocial disparities, few evidence-based interventions have been adapted to promote optimal survivorship among Latina breast cancer survivors (BCS). To address this need, we developed the *My Guide* smartphone application for Latina BCS. *My Guide* was culturally adapted for Latinas and designed to target breast cancer knowledge, coping behaviors, and cancer-related self-efficacy, which have been identified as modifiable intervention targets. In a randomized controlled trial, *My Guide* was compared to an attention-control and culturally adapted health promotion application, *My Health*. This presentation describes the longitudinal effects of *My Guide* and *My Health* on the intervention targets and explores differential experimental condition effects by average weekly application use during the six week study.

Methods: Latina BCS who had completed primary cancer treatment for early-stage breast cancer were randomized 1:1 to use *My Guide* or *My Health* for six weeks in their preferred language (English or Spanish). Assessments of breast cancer knowledge, coping behaviors, and cancer-related self-efficacy occurred at baseline, six weeks (post-intervention), and eight weeks. Linear mixed effects modeling was used to assess differences in changes in intervention targets over time between study conditions, controlling for language preference and education.

Results: Participants ($N = 78$) were an average of 52.54 years old ($SD = 11.36$), and most were born outside of the United States (71%) with Spanish as their preferred language (64%). There were no significant group x time effects on the outcomes of interest. However, women in both conditions had improved breast cancer knowledge over time. Women in both conditions identified as high application users (i.e., an average of at least one hour of application use per week) reported increased use of positive reframing and religious coping. In addition, high users in *My Guide* reported less self-blame than high users in *My Health*. There were no effects on cancer-related self-efficacy, though self-efficacy was high in this sample at baseline.

Conclusions: This was the first study to test culturally informed and evidence-based smartphone applications designed specifically for Latina BCS. Preliminary findings suggest that greater use of the applications resulted in favorable outcomes, and Latina BCS may benefit from smartphone application-based programs designed to improve cancer survivorship.

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MEETING THE PSYCHOSOCIAL NEEDS OF BREAST CANCER SURVIVORS: EXAMINING ACCESS TO RESOURCES IN RURAL APPALACHIAN OHIO

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Background: Social support is integral to cancer patients' physical and mental health, quality of life and well-being. Cancer patients often experience diminished social support, leaving survivors vulnerable to isolation, poor adherence to care and worse health outcomes; this is particularly true among breast and gynecological cancer survivors who experience greater psychosocial distress and lowered quality of life compared to other cancer survivors. However, survivors and clinicians may not always recognize diminished support and identify resources to help meet these support needs. This process may be particularly challenging in rural communities where health care access issues, limited resources, socioeconomic burdens and cultural factors may exacerbate negative effects of diminished social support.

Methods: To examine ways rural, Appalachian breast and gynecological cancer survivors' psychosocial needs are met, we conducted 10 key-informant interviews with health care and social service providers serving these patients. Interviews were audio-taped, transcribed and analyzed using a consensus coding process with 2 independent coders to generate themes.

Results: Patient care is often affected by financial constraints, low health literacy, unreliable transportation, and limited specialized mental health services; and available support programs are not maximally utilized by survivors. Furthermore, providers affirmed adequate care but suggested needed improvements, including increasing the quantity and diversity of support services, increasing patient awareness of available services, and advocating for increased funding.

Conclusions: Findings highlight gaps in supportive care that negatively influence cancer survivors' ability to access support services and provide a foundation for providers to enhance patient-centered care, placing increased emphasis on psychosocial well-being.

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EXPLORING CAREGIVERS' OF PATIENTS WITH PRIMARY BRAIN TUMORS EXPERIENCES WITH AND NEEDS RELATED TO SEIZURE MANAGEMENT

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Family caregivers of persons with primary brain tumors report high levels of distress. Information is limited, however, regarding family caregivers' experiences and needs concerning the risk and management of seizures in this population. In this qualitative descriptive study, we conducted one-on-one interviews to describe the experiences of family caregivers' of persons with primary brain tumors who have had *and* who have not yet had a seizure. We sought information on how they coped with this issue and what information they needed regarding management of out-of-the-hospital seizures. We conducted 15 interviews using study-specific interview protocols; 10 caregivers with seizure experience and 5 caregivers without seizure experience. Caregivers were, on average, 52 years old, predominately white (93.3%), college graduates (66.7%), and were employed full-time (53.3%). The relationship between caregiver and care recipient was spouse (46.7%), other family member (46.7%), and friend (6.6%). Most caregivers provided care everyday (46.7%) and for more than 8 hours per day (33.3%). Themes emerged around three major domains: 1) caregiver challenges regarding seizures, 2) desired resources/information about seizures, and 3) timing of delivery of these resources. Caregivers often reported being fearful of seizures and the majority (93%) expressing difficulty with knowing when to call EMS. In terms of desired resources, opinions were split between preferring written materials versus online resources with most participants (87%) stating that videos or graphics detailing seizures would be helpful. In terms of delivery timing, most (66.7%) thought that training should come after diagnosis versus at the time of diagnosis citing reasons such as too much other information to absorb and overall inability to focus. Future studies will use this information to develop and pilot a seizure-focused supportive caregiver intervention that is tailored and caregiver-directed and that can be incorporated into standard neuro-oncology clinical practice.

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OPTIMISM AND CURABILITY PERCEPTION AMONG PATIENTS WITH ADVANCED, INCURABLE CANCER

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Introduction: Maintaining positive expectations of the future (i.e., an optimistic outlook) is highly psychologically adaptive, and clinicians and family members often encourage patients with cancer to maintain positive expectations. However, given research showing that in certain contexts optimism may be associated with less desirable outcomes (Gibson & Sanbonmatsu, 2004), this study examined whether patients who are more optimistic held more unrealistic, inaccurate perceptions regarding the curability of their cancer?

Methods: Baseline data of 230 patients with advanced, incurable cancer participating in a psychotherapy clinical trial were examined. Patients completed a measure of optimism and pessimism (Life Orientation Test-Revised). Patients also reported on whether their cancer was incurable (0), unlikely curable (1), likely curable (2), or curable (3). Several measures of psychological well-being and distress were also assessed (e.g., Hospital Anxiety and Depression Scale).

Results: Patients with higher optimism held stronger perceptions of their cancer as curable ($r = .20, p < .01$). Pessimism was unrelated to curability perception ($r = .01, p = .94$). Adjusted analyses showed that the association between optimism and curability perception existed independent of psychological distress and well-being (e.g., depression symptoms; psychological quality of life; $b = .06, p = .03$).

Discussion: The psychologically adaptive feature of positive expectations of the future was associated with more inaccurate, unrealistic curability perceptions. Results may be indicative of the challenge patients face in maintaining optimism while coming to grips with the incurability of their cancer. Future research should examine if helping patients identify new, more realistic targets to have favorable expectations about (e.g., symptom control) could help maintain optimism, while also facilitating realistic expectations and informed decision-making and planning (Jackson et al., 2013).

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DIFFERENCES IN PSYCHOLOGICAL WELLBEING BASED ON CANCER TYPE DURING CANCER DIAGNOSIS

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Background: Cancer diagnosis and treatment generate a myriad of stressors for patients and their social circles. Active/primary treatment can last several years and introduce persistent challenges. Past studies have indicated existence of high levels of clinically significant symptoms of depression, anxiety, fear of recurrence (or progression), as well as lower levels of physical and mental health, with greater role limitations and social functioning. We aim to determine differences in psychological wellbeing based on type of cancer patients have.

Methods: This study is a preliminary analyses of baseline data collected using the Rapid Case Ascertainment (RCA) at Yale Cancer Center to identify newly diagnosed cases of colorectal, breast, and prostate cancers from local hospitals. Approved and consented participants complete a questionnaire inquiring about illness comorbidities, social support, self-efficacy, optimism, emotion regulation, anxiety/depression, spirituality, meaning of cancer, and coping.

Results: Preliminary baseline sample characteristics indicate that participants ($n=159$) had a mean age of 57.4 years and an average household income of \$97,079.15 ($SD=83,430.85$). The majority of the sample are female ($n=94$, 65.7%), are college educated ($n=86$, 61.5%), Caucasian ($n=124$, 78.5%) are non-Hispanic/Latino ($n=120$, 90.2%), married ($n=90$, 64.7%) and working full-time ($n=59$, 41.5%) or retired ($n=34$, 23.9%). Most were diagnosed with breast ($n=95$, 60.9%) or prostate cancer ($n=47$, 29.6%), followed by colorectal cancers ($n=14$, 9.0%). Overall, patients with prostate cancer showed higher levels of self-efficacy, spirituality, and physical functioning relative to those with breast or colorectal cancer. Those with breast cancer showed stronger coping, emotional processing, and responses to stressful experiences, often seen as an aspect of resiliency. Those with colorectal cancers were better at regulating emotions, but had more depression, anxiety, and PTSD symptoms than those with other types of cancer.

Conclusion: This research adds important information to the field of psychosocial considerations for individuals in active treatment. Outcome variables vary widely by cancer type, especially for those with colorectal cancers having more psychological symptomology than the other two types. Colorectal cancer survivors may experience increased distress because these individuals are often in a “watchful waiting” period rather than active treatment, prompting greater uncertainty about the future, testing resiliency. Additional research is required to understand this phenomenon and if it occurs in larger samples over time.

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FEASIBILITY OF A REMOTE BASED EXERCISE PILOT RCT IN MEN WITH METASTATIC PROSTATE CANCER: RESEARCH IN PROGRESS FROM THE CHAMP STUDY

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Background: Aerobic and resistance exercise may improve prostate cancer clinical and quality of life outcomes. No randomized controlled trials (RCTs) have published on the safety and feasibility of exercise in men with metastatic castration-resistant prostate cancer (mCRPC).

Methods: CHAMP is an ongoing pilot RCT examining the feasibility of a 12-week remotely delivered exercise intervention in mCRPC patients. Men are recruited from UCSF patient lists and doctor referrals (outside referrals allowed). Select enrollment criteria include: Eastern Cooperative Oncology Group (ECOG) performance status of 0-1; clearance to undergo a maximal Steep Ramp exercise test on a cycle ergometer and to complete vigorous aerobic and resistance exercise training; no history of hypertension that is not well controlled; cardiologist clearance, if warranted; English-speaking; and living within 3-hours drive unless referred by MD. Participants are randomized (1:1:1) to aerobic exercise 3X/week, resistance exercise 3X/week, or control. The study protocol initially specified supervised exercise, but distance to come on site for training was a barrier to accrual. We thus developed a remote exercise program (Sept 2017) wherein all men complete their exercise prescription at a local exercise facility and visit UCSF at baseline & post-12 weeks. They complete pre- and post-exercise session surveys, wear heart rate monitors during exercise sessions, and are contacted once/week by an exercise physiologist. We present study population characteristics and comment on preliminary adherence to the exercise programs.

Results: As of 8/21/19, 443 patients were assessed for eligibility; 292 (66%) were not eligible. Another 122 patients were excluded due to oncologist's discretion ($n=78$), declined participation ($n=21$), and inability to contact ($n=23$). 25 patients have been randomized to date (9 aerobic, 8 resistance, and 8 control; 3 supervised, 14 remote). Follow-up is 96%; 20 patients completed the 12-wk study; 1 person withdrew because he moved out of state. Median age is 72, range: 51-84; median BMI is 28.7 kg/m², range: 22.6-36.7; and median time from diagnosis to enrollment is 10.5 years, range: 0.9-26.3. Three are African American, 2 are Asian, 19 are white, and 1 is other race. 80% have a 4 yr university education or higher, 84% are married or in a civil partnership, 8% are current smokers, and 32% are past smokers. Men have metastases to bone (72%), lymph node(s) (52%), and lung (8%). Overall, men travel a median of 36.8 miles one way to UCSF. The 14 remote intervention participants travel a median of 87.5 miles (range: 14-280) one way to UCSF. Men who completed the 12-week remote intervention in CHAMP attempted 98% of prescribed workouts. Of the sessions they attempted, they completed 78% as prescribed. No safety concerns have been identified.

Conclusions: A remote exercise intervention is feasible among men with mCRPC.

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GEOSPATIAL ANALYSIS OF INVASIVE LUNG CANCER BURDEN IN TENNESSEE, 2005-2015

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Purpose: Lung cancer (LC) is the second most commonly diagnosed cancer and the leading cause of cancer related deaths for both men and women in the United States (U.S). Previous research has demonstrated that the Appalachian region, which extends from parts of New York to Mississippi, experiences elevated cancer risk and disproportionate burden compared to the non-Appalachian region. In terms of specific cancers, the geographic differences in LC rates are attributed to greater tobacco use, poverty, low literacy and less use of healthcare services. Tennessee is one of the largest and most diverse states in Appalachia in terms of race/ethnicity, income and location (rural vs. urban) and 52 out of 95 of its counties are considered Appalachian. The goal of this analysis is to examine the geographic variations in invasive LC incidence in Tennessee between Appalachian and non-Appalachian counties.

Methods: Age-adjusted invasive LC incidence rates per 100,000 population were calculated using data from the Tennessee State Department of Health from 2005 to 2015. This data was imported into ESRI ArcGIS 10.7 to generate incidence maps by county, sex and age.

Results: A total of 56,655 invasive LC cases were used for analysis based on data completion with an average age of 67.46. Of those cases, 56.1% (31,776) were males and 43.9% (24,879) females. For race, 88.3% (50,002) identified as white, 11.1% (6,276) as black and 0.7% (377) as other races. In terms of place at diagnosis, 53.2% (30,139) occurred in Appalachian counties and 46.8% (26,516) in non-Appalachian counties. The overall geographic distribution displayed clusters of the highest age-adjusted rates (1140.84-1329.61/100,000) in the largely rural, Northern Appalachian portion of Tennessee along the border of Kentucky. The same pattern is seen when aggregating by sex, however the highest age-adjusted rates for males are 1508.77-1743.48/100,000 compared to females with 900.11-1217.88/100,000.

Conclusions: The results indicate a disparity between Appalachian and non-Appalachian counties in LC incidence in Tennessee. Incidence of the highest rates occurs in predominantly rural counties of the state, particularly those Appalachian counties that border Kentucky. Future analysis will take into account environmental exposures, smoking rates and socioeconomic status.

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BIOPSYCHOSOCIAL FACTORS, GUT MICROBIOTA, AND METABOLIC SYNDROME IN CANCER CAREGIVERS

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Background: Caregiving is associated with increased risk of cardiovascular disease (CVD). However, the mechanisms linking caregiving with CVD have not been elucidated. The aims of this study were to begin to explore the biopsychosocial and gut microbiota predictors of metabolic syndrome, an intermediate endpoint for CVD, in cancer caregivers.

Methods: Caregivers were recruited from an outpatient oncology clinic. Caregivers were administered a battery of questionnaires. Fecal samples were collected to obtain data on gut bacteria. Metabolic syndrome was based on five criteria including abdominal girth, high density lipoprotein, triglycerides, glucose, and blood pressure. Mild metabolic syndrome included caregivers who met three of the five criteria while severe metabolic syndrome included those who met all five of the criteria. Descriptive statistics, analysis of composition of microbiomes (ANCOM), and order restricted inference (ORIOGEN) were used to test the hypotheses.

Results: Of the 30 caregivers included in the study, the majority were female (73.3%), Caucasian (93.3%), the spouse or intimate partner of the patient (83.3%), and the mean age of caregivers was 60.4 years. A total of 59.3% of the caregivers met the criteria for metabolic syndrome (MetS). Microbial diversity was lower in caregivers with poor patient-caregiver relationship quality (Williams' type test statistics=1.99, p=0.0349). A 12-fold increase in the abundance of *Clostridium citroniae* (ANCOM-BC= 3.44, p < 0.001) and an 11-fold increase in the abundance of *Parabacteroides distasonis* (ANCOM-BC=2.77, p=0.006) was observed among caregivers with severe metabolic syndrome when compared to those who had mild metabolic syndrome. There was a 15-fold increase in the abundance of *Akkermansia muciniphila*, among caregivers with mild metabolic syndrome compared to those who had severe metabolic syndrome (ANCOM-BC=2.72, p=0.03). *Anaerostipes* spp. was present in caregivers with mild metabolic syndrome but absent among caregivers with severe metabolic syndrome (Structural zero according to ANCOM-BC, p< 0.001). We observed that several species of the genera *Bacteroides* were highly abundant among caregivers with high levels of depressive symptoms or with poor patient-caregiver relationships quality. Caregivers with high diversity of taxa also tend to have higher levels of IL-6 (F(1,29)=5.25, p< 0.05).

Conclusion: *Clostridium* Spp and *Akkermansia muciniphila* are important in the maintenance of metabolic homeostasis and has been linked to CVD. We plan to test the direct and indirect links between psychosocial and behavioral factors, gut bacteria, and metabolic syndrome in a larger sample. If similar findings are observed, psychosocial interventions and nutritional supplements targeting these gut bacteria, may be recommended to reduce the risk of metabolic syndrome and CVD in cancer caregivers.

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CANCER PATIENTS' UNDERSTANDING OF AND COMFORT WITH SEXUAL ORIENTATION AND GENDER IDENTITY (SOGI) QUESTIONS

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Cancer disparities exist among sexual and gender minority (SGM) cancer patients. Collecting sexual orientation and gender identity (SOGI) data is important in providing individualized care. These data are not included in prominent cancer registries, such as the National Cancer Institute's Surveillance, Epidemiology, and End Results Program, the nation's leading source of information on cancer incidence, mortality, and survival. Furthermore, despite recommendations by the National Academy of Medicine, the US Department of Health and Human Services, and the Joint Commission, SOGI data are not routinely collected in healthcare settings. Research on patients' willingness to disclose SOGI data using standardized approaches for disclosure in healthcare stem primarily from primary care and emergency department settings. The present study extends that work to cancer care and utilizes a cross-sectional survey to assess cancer patients' understanding of SOGI terms, their comfort with recommended questions, and their preferred way to communicate this information to healthcare providers. Between May-July 2018, 225 oncology patients at an NCI-Designated Comprehensive Cancer Center were provided a paper-and-pencil survey at check-in, and 169 (75%) patients completed the survey. Overall, participants reported favorable perceptions (including clarity of questions and answer choices, ease of answering questions, comfort in sharing information about gender, and willingness to provide personal information on a hospital form) regarding answering SOGI questions, as evidenced by average scores in the range 4.36-4.53 (on a 1-5 Likert scale, with higher scores indicating more favorable perceptions). A varied distribution of responses was found for preferred mode of asking SOGI questions - approximately 70% participants reported a preference for verbal questions to them about their gender and 69% for or verbal questions to them about sex at birth. Online reporting, on the other hand, was the preferred mode for asking pronoun questions (42%) and sexual orientation questions (42%). These findings reveal high acceptability of SOGI data collection, and varied preferences for ways to communicate SOGI information to healthcare providers. The invisibility of SGM populations in the context of cancer is directly attributable to the lack of SOGI data collection. Cancer care institutions need to encourage SOGI disclosure in order to provide equitable care to all cancer patients.

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VARIANCE IN MODE OF DETECTION FOR BREAST CANCER BY BREAST DENSITY AND STAGE AT DIAGNOSIS

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Introduction and Background: Mammography is reported to have an overall sensitivity of 87% according to the Breast Cancer Surveillance Consortium (BCSC). However, evidence from more recent screening and population-based studies in Europe indicate that a significant proportion of patients come into care with breast cancer symptoms, which in turn trigger diagnosis rather than regular screening mammography. Women with breast cancer symptoms often have late stage cancer at diagnosis. This implies that previous negative mammograms are false negatives, and that screening mammography alone was insufficient for currently symptomatic women.

Specific Experimental Aims: In a US population-based cohort of women who have developed breast cancer, we will 1) determine the variance in mode of detection for breast cancer, and 2) determine if mode of detection varied in this population by breast density and by stage at diagnosis.

Methods: We identified a cohort of 386 women with a diagnosis of first time breast cancer (using ICD codes) within the Rochester Epidemiology Project (REP), which has 98.5% patient coverage in the selected 7 county area of attainment. We randomly sampled 90 women from this cohort and performed chart review to collect outcome variables and potential covariates. These data were collected in REDCap, and reported with descriptive statistics.

Results: Within our current cohort (n=90), 23% (21/90) had DCIS, 43% (39/90) had non-advanced cancer, and 33% (30/90) had advanced cancer. This is consistent with literature that suggests that one third of all breast cancers are found at late stage. For women with DCIS, 95% (20/21) were found with screening mammography, compared to only 72% (28/39) of non-advanced and 53% (16/30) advanced. This suggests that screening mammography is more successful in identifying DCIS but may more frequently miss early and especially later stage breast cancer. Approximately 50% (43/86, with 4/90 of unknown density) had dense breasts, which corresponds well with BCSC data indicating this of 47% in the normal screening population. Screening mammography was the mode of detection for 67% (29/43) women with dense breasts, and 81% (35/43) of women with non-dense breasts. This is consistent with the literature that suggests that women with dense breasts have a sensitivity decrease of 10-29% with screening mammography.

Conclusions: These data suggest that our population reflects both the breast density rate and the rate of advanced cancers found in the national population, and that there is a strong likelihood that for women with dense breasts or non-DCIS, screening mammography alone may not be sufficient to detect breast cancer. This disparity from the literature may be due to misattribution of mode of detection for breast cancer, especially in later stages of disease where the true mode of detection is more likely to be symptoms than screening mammography.

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ANXIETY AND DEPRESSION SYMPTOMS AMONG CAREGIVERS OF STEM CELL TRANSPLANT RECIPIENTS PRIOR TO TRANSPLANT

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Background: Stem cell transplant (SCT) is a potentially curative therapy for patients with hematologic malignancies that involves prolonged hospitalization, intensive follow-up, and considerable risk of morbidity and mortality. Family and friends caring for SCT recipients experience substantial caregiving burden as they prepare for SCT which may impact their psychological distress; yet, little research has described the extent of this distress. The goals of the present study were to characterize rates of anxiety and depression symptoms immediately prior to SCT and their relationship with certain domains of quality of life (QOL) and caregiving burden.

Methods: We conducted a secondary analysis of cross-sectional data to investigate study aims. Caregivers completed study questionnaires (i.e., Hospital Anxiety and Depression Scale [HADS] and CareGiver Oncology QOL) prior to SCT. Scores >8 on the HADS anxiety and depression subscales indicate clinically significant symptoms. We selected eight domains from the CareGiver Oncology QOL, which is a multidimensional tool of caregiving burden and QOL, including social support, physical wellbeing, self-efficacy, coping, leisure time, financial stability, private life concerns, and caregiving burden. Multiple regression models adjusting for age, sex, caregiver relationship, and SCT type (autologous and allogeneic) were used to examine associations between these domains and caregivers' anxiety and depression symptoms.

Results: A total of 193 caregivers (age $M = 57$ years, 70% female, 52% allogeneic transplant) were included. A majority of participants were caring for a spouse (80%), parent (8%), or child (5%). On average, caregivers reported more anxiety ($M = 7.04$, $SD = 3.94$) than depression symptoms ($M = 4.18$, $SD = 3.49$), with 47% and 16% endorsing clinically significant anxiety and depression symptoms, respectively. Low social support, worse physical well-being, poor self-efficacy and coping, less leisure time, as well as higher financial distress, private life concerns, and caregiving burden were associated with higher caregiver anxiety symptoms ($ps < .05$). These quality of life domains were also associated with higher caregiver depression symptoms in the same directions ($ps < .05$), with the exception of self-efficacy ($p > .05$).

Conclusions: Caregivers of SCT recipients experience substantial anxiety and depression symptoms prior to SCT. Impairments across multiple QOL domains are associated with caregivers' psychological distress prior to SCT. Psychosocial interventions designed to manage transplant and caregiving expectations, improve coping, reduce caregiving burden, and improve QOL are critically-needed for caregivers prior to transplant.

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PERCEPTIONS AND EXPERIENCES OF WOMEN TESTING POSITIVE FOR BRCA1/2 GENETIC MUTATIONS: A QUALITATIVE ANALYSIS

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Background: Individuals testing positive for the *BRCA1/2* genes, or hereditary cancer mutations, are 33-55% more likely to develop breast and ovarian cancers before the age of 70. Genetic counseling for suspected *BRCA1/2* mutations is recommended for individuals with an increased risk of having a mutation, which is dependent on a number of personal, family, and clinical variables. Unfortunately, very little research exists regarding women's perceptions and experiences of undergoing genetic counseling in the United States.

Methodology: The current study is a cross-sectional, qualitative analysis of the experiences of women who have tested positive for either (or both) *BRCA1/2* genetic mutations within the past five years. Participants were recruited from four major online support groups for women with these genetic mutations. Participants provided email addresses or scheduled an appointment online through the private study Facebook page. Interviews were scheduled and completed through participant's choice of phone call or Skype interview. Foci of interviews ascertained how participants viewed their experience of genetic counseling and how counseling could be enhanced in the future. Thematic analyses were completed by two independent coders for each interview to create major themes across participants.

Results: A total of 34 participants completed the interview, answering questions related to family history, genetic counseling experience, and emotional impact of results. Interviews ranged from 5.30 to 37.02 minutes in duration ($M=19.52$). Six major qualitative themes were identified: Family Reaction/Support ($n=29$), Emotional Reaction ($n=33$), Perceived Risk ($n=34$), Preventive Measures ($n=34$), Healthcare System ($n=34$), and Future Recommendations ($n=31$). Specific observations present in participant interviews regarding these particular areas were categorized into one of the six major themes above. Negative psychological responses, financial/insurance issues, therapeutic needs, treatment information, and guidance were the primary sources of stress within this sample, whereas positive subthemes included empowerment, self-advocacy, and active cancer awareness.

Conclusion: It is apparent that there are both positive and negative perceptions and experiences relating to familial reaction/support, doctor/patient communication, insurance coverage, available patient resources, and genetic counseling experience as a whole. Although some aspects may project positivity, results suggest a need for future research and education for genetic counselors and others providing care for women being tested for *BRCA1/2* mutations.

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A MODEL EXPLAINING TREATMENT ADHERENCE AND TREATMENT DECISIONAL DISTRESS IN BREAST CANCER SURVIVORS TAKING ADJUVANT THERAPY

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Although adjuvant hormone therapy is lifesaving for breast cancer survivors, it requires taking oral medication daily for five years, and due largely to treatment side effects, approximately 40% of women are non-persistent within two years. Programs to increase adherence to adjuvant therapy have consistently failed to produce significant effects and have not typically addressed the distress women experience about treatment decisions. To advance the field, it is crucial to begin by developing an empirically-supported model identifying malleable and modifiable mechanisms that shape both treatment adherence and treatment decisional distress.

To develop such a model, we first drew from existing theoretical work on treatment adherence to identify a pool of potentially important variables, then conducted psychometric work with general medical samples to reduce the pool to a set of variables that were distinct, could be assessed with high validity, and were robustly associated with adherence. This process resulted in 8 key variables: 2 attitude variables (perceived benefit of treatment, and perceived burden of treatment), 4 interpersonal variables (alliance with a physician, understanding medical information from a physician, and negative and positive interactions with significant social support persons), and 2 stress-response variables (perceived stress and financial stress). Based on this, we proposed a model where interpersonal and stress-response variables predict both treatment adherence and decisional distress, and where all the effects of these variables on adherence are mediated by the two attitude variables and by decisional distress.

To provide a preliminary test of this model, 130 breast cancer survivors were recruited via marketing research panels to complete an online questionnaire. The sample included 80 women currently taking adjuvant hormone therapy and 50 women formerly taking adjuvant therapy responding to questionnaire items by recalling their previous experience. The questionnaire included multi-item scales, validated in previous research, assessing all model variables and side effect/symptom severity. Based on the model, treatment adherence was expected to correlate with 9 variables, and decisional distress with 7, and all but one of these were significant. The model also suggested 18 possible mediational pathways, and all but five were significant. Although further work is needed to test the model in a longitudinal study of women recently prescribed adjuvant therapy, these preliminary results are promising, and this line of research may lead to novel interventions to increase treatment adherence and reduce decisional distress.

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QUALITY ASSESSMENT OF CLINICAL PRACTICE GUIDELINES IN PSYCHOSOCIAL ONCOLOGY USING THE AGREE II TOOL

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Background: The use of science in clinical practice is integrated into the professional and ethical obligations of psychologists; however, recent findings suggest that psychologists often fail to keep up-to-date with current research and neglect to use evidence-based approaches. A recent effort to close this science-practice gap has been through the use of clinical practice guidelines (CPGs). CPGs are evidence-based tools designed to help healthcare professionals implement best-care practices and have been developed for a wide variety of settings, including psychosocial oncology. Despite the recognition that psychosocial factors have an important impact on the quality of life of cancer patients, patients often report that their psychosocial needs are not sufficiently addressed in treatment. Access to good-quality CPGs targeting cancer-related psychosocial challenges would help ensure that psychologists are well-equipped to address these needs. However, the quality of CPGs currently available in psychosocial oncology is unknown. In the present study, the quality of psychosocial oncology CPGs was assessed using the AGREE II method.

Methods: A total of 17 CPGs were evaluated independently by 4 trained appraisers using the AGREE II instrument. The AGREE II consists of 23 items across the 6 domains: scope and purpose, stakeholder involvement, rigor of development, clarity of presentation, applicability, and editorial independence. Based on appraiser ratings, each domain is given a score, with 0% indicating lowest possible quality and 100% indicating highest possible quality. An overall quality score is calculated based on individual domain scores, with 60% being the cutoff for acceptable CPG quality.

Results: The average score for overall quality across the 17 CPGs assessed was 77%, with only two CPGs falling below the acceptability cutoff of 60%. Average scores across the 6 domains ranged from 93-35%, with the highest score being 93% for Scope and Purpose and the lowest score being 35% for Applicability. Of the 17 CPGs, 14 were recommended for use in their current state by appraisers.

Conclusions: These findings suggest that most currently available psychosocial oncology CPGs are of good quality and, as such, have the potential to aid psychologists in addressing the psychosocial needs of cancer patients. Future research should seek to investigate CPG use among psychologists working in psychosocial oncology settings.

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REACTIVITY TO ULTRAVIOLET RADIATION EXPOSURE MONITORING WITHOUT FEEDBACK AMONG CHILDREN AND PARENTS

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Skin cancer is the most common type of cancer, accounting for over half of all cancers diagnosed. The primary risk factor for skin cancer is ultraviolet radiation (UVR) exposure. UVR exposure is therefore essential to assess, including as an outcome of skin cancer preventive interventions. However, it is unknown to what extent the act of monitoring UVR exposure may be associated with behavioral or attitudinal changes (e.g., cancer worry, perceived risk). The goal of the current study was to assess potential reactivity associated with wearing a UVR monitoring device.

Ninety-seven parents (77% biological mothers) and their 97 children (mean age=12.7, SD=2.7) were asked to wear a UVR monitoring device called Shade on their clothing during a two-week period. Participants completed a questionnaire at baseline and study exit about skin cancer prevention behaviors such as wearing sunscreen, sunburn, tanning, and attitudinal changes such as cancer worry and perceived risk. Items were asked on a 5-point Likert scale from “never” to “always.” To explore potential reactivity associated with wearing a UVR monitoring device, changes in outcomes from baseline to exit were examined using analysis of covariance (ANCOVA), controlling for the season at time of enrollment.

Analyses indicated little change in the outcomes of interest (UVR exposure measured from the device, and per child self-report, parent self-report, and parent report on child on skin cancer prevention behaviors, tanning, sunburn, perceived risk, cancer worry, and response efficacy) from baseline to exit. Some significant changes in skin cancer preventive behaviors over time were found, including in long sleeve and pants wearing. For example, per parent-report about their child, long sleeved shirt wearing increased significantly between time points ($F(1.0, 84.0) = 4.3, p=.04$). However, these changes reflect small and not clinically significant changes in means levels of these behaviors (e.g., $M=1.85$ at baseline, $M=2.16$ at exit).

Our findings provide initial evidence that use of a UVR monitoring device among parents and children does not result in significant changes in UVR exposure, skin cancer prevention behaviors, or attitudes. Future studies could further assess potential reactivity associated with use of wearable UVR monitoring devices, and account for other factors that may impact reactivity such as child age, time spent outdoors, and geographic location. These findings suggest that objective UVR exposure measured via a UVR monitoring device such as the Shade device could be used as an outcome in skin cancer prevention interventions.

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PLATFORM TYPE AND CANCER-RELATED CONTENT INFLUENCE SOCIAL SUPPORT ON SOCIAL MEDIA AMONG YOUNG ADULT CANCER CAREGIVERS

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Background: Young adult cancer caregivers (YACC) use social media during their cancer experiences to seek social support from online communities. We studied the extent to which social media platform type and presence of cancer-related content in social media posts influenced the social support offered in response to YACC's posts during the first six months of caregiving.

Methods: Eligible YACC aged 18-39 were caring for a cancer patient diagnosed between 6 months to 5 years prior, spoke English and used social media at least once per week. YACC completed an interview and survey, then gave permission for their social media posts to be collected retrospectively from six months following the patient's diagnosis. We collected original posts from YACC's Facebook and/or Instagram profiles and all responses to these posts. Original posts and responses were manually coded for the presence of five types of social support (emotional, information, validation, companionship, instrumental). Support variables were transformed to depict the proportion of responses per post that contained each type of social support. Using mixed-effects models, we compared the distributions of each type of social support offered in response to YACC's original posts by platform type (Facebook vs. Instagram) and cancer-related content (no vs. yes). Summary statistics were calculated for YACC sociodemographics, patient cancer factors, and social media use.

Results: We analyzed N=1,527 social media responses from N=33 YACC. YACC were 70.6% female, 91.2% non-Hispanic White, and 85.3% employed. YACC were most commonly caring for a spouse/partner (52.9%), or a parent (23.5%). The most common type of social support offered was emotional (72.1%), followed by information (20.4%) and validation (17.2%). There were significantly more responses that contained emotional support on Instagram compared to Facebook ($\beta = 0.25$, Standard Error(SE) = 0.09, $p = 0.007$). There were significantly more responses with cancer-related content that contained validation support ($\beta = 0.20$, SE = 0.07, $p = 0.002$), but fewer responses containing emotional ($\beta = -0.17$, SE = 0.07, $p = 0.02$) and instrumental support ($\beta = -0.06$, SE = 0.02, $p = 0.001$) compared to posts without cancer-related content.

Conclusions: Future interventions for YACC should consider how platform features and user characteristics (e.g., close vs. weak ties) change the nature of social support offers. Clinicians and supportive care personnel can guide YACC on strategies that are most likely to result in supportive social media responses. For example, YACC may benefit from guidance on which platforms are set up for users to conveniently offer different types of support, and caution about the overuse of cancer-related terms which may lead to diminishing social support over time.

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HIGH REPRODUCTIVE CONCERNS ASSOCIATED WITH FERTILITY COUNSELING: A CROSS-SECTIONAL STUDY OF YOUNG ADULT MALE CANCER SURVIVORS

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Background: Reproductive concerns are common among young adult cancer survivors. Fertility consultation (FC) has been proposed as a possible intervention strategy, but the relationship between FC and reproductive concerns among young adult (YA) male survivors has not been established.

Purpose: This study examined the association between FC and multiple dimensions of reproductive concerns among YA male cancer survivors.

Methods: One hundred and seventy YA male cancer survivors (age 18 to 35) across the United States completed a cross-sectional, online survey between 2016 and 2018. Participants reported demographics, receipt of FC, and reproductive concerns. Reproductive concerns were measured multidimensionally using the Reproductive Concerns after Cancer-Male scale. We used log binomial regression to examine the association between FC and high reproductive concerns across multiple domains.

Results: In multivariate analyses adjusting for desire for children, FC was associated with higher likelihood of having at least one high reproductive concern (RR 1.4, 95% CI 1.2-1.7, $p < .001$). Across subscales, FC was associated with greater likelihood of having high concerns about fertility potential (RR 1.7, 95% CI 1.0-3.0, $p = .06$), achieving pregnancy (RR 3.5, 95% CI 1.3-9.5, $p = .01$), their (potential) child's health (RR 1.5, 95% CI 1.1-2.2, $p = .02$), and disclosing infertility to a partner (RR 2.7, 95% CI 1.8-4.1, $p < .001$). In contrast, associations were not observed between fertility consultation and likelihood of high concerns about personal health (RR 1.4, 95% CI 0.5-3.8, $p = .48$) or acceptance of infertility (RR 1.8, 95% CI 0.8-3.9, $p = .14$).

Conclusions: YA male cancer survivors who received FC were more likely to have high reproductive concerns than those who did not receive FC. Men who seek out FC after cancer diagnosis may need additional continued support for their reproductive concerns. Research is needed to identify strategies to alleviate these concerns among this population.

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LONGITUDINAL STUDY COMPARING ORAL CURCUMIN AND AGE GROUP ON CANCER-RELATED FATIGUE IN BREAST CANCER PATIENTS

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Background: Patients with breast cancer undergoing radiation therapy commonly experience cancer-related fatigue (CRF) symptoms. Oral curcumin is a biologically active component from turmeric with anti-inflammatory properties that may reduce symptoms of CRF. Age is also thought to be a factor in patient-reported symptoms; older patients may under-report symptoms. Although to our knowledge, research on the impact of age on CRF is limited. The goal of this study was to evaluate whether oral curcumin supplementation or age has an effect on CRF in patients with breast cancer.

Methods: In a phase II nationwide randomized controlled trial in the NCI Community Oncology Research Program (NCORP) network, female breast cancer patients receiving radiation therapy were randomized to 2 g capsules of curcumin powder three times (6 g)/ day (n=341) or placebo (n=337) starting at Day 1 of radiation therapy to one week post-radiation. Compliance was measured by weekly pill counts. Patients were further divided by age group: younger age (< 60yrs, n=386) vs. older age (≥60 yrs, n=292). CRF symptoms were assessed at pre-radiation (baseline), post-radiation, one-week post-radiation and one-month post-radiation using the Symptom Inventory Questionnaire. Multivariate regression analyses evaluated differences in CRF at each time point, controlling for baseline CRF, cancer stage and previous cancer treatment.

Results: There were 678 total participants. Those in the younger age group reported more CRF symptoms at the end of radiation therapy ($p=0.025$; 95% C.I. 0.068, 0.983). One week post-radiation therapy, the younger group continued to trend towards higher CRF symptoms ($p=0.107$; 95% C.I. -0.074, 0.761). Older patients receiving curcumin supplementation reported less CRF at the end of radiation therapy than younger patients receiving curcumin ($p=0.021$; 95% C.I. 0.119, 1.422). There was no difference in CRF symptoms between the curcumin and the placebo arm at any time point throughout the study.

Conclusion: Younger patients reported greater CRF in this study. Oral curcumin potentially benefitted older patients more than younger patients receiving supplementation. There were no statistically significant reported differences in symptoms of CRF from oral curcumin supplementation vs. placebo. More research is needed on the impact of curcumin supplementation and age on symptoms in patients with breast cancer. Older patients may under-report CRF symptoms.

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BUILDING A PEER SUPPORT PROGRAM FOR PATIENTS WITH ESOPHAGEAL CANCER

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Background: Existing peer support programs have been implemented and tested predominately in women with breast cancer. Little research has been done with esophageal cancer (EC) patients, despite a growing population of survivors and a rapidly changing treatment landscape. Peer support programs may provide benefit through individual connections and experiences for patients with newly diagnosed EC.

Purpose: We sought to better understand the needs of EC patients during diagnosis, treatment and survivorship to develop a curriculum to train EC survivors to provide peer support to newly diagnosed patients.

Methods: We conducted two parallel phases: elicitation of input from expert stakeholders and individual qualitative, semi-structured interviews with EC survivors. In the first phase, we convened stakeholders from different disciplines representing medical oncology, psychosocial oncology, social work, thoracic surgery and patient advocates. We elicited input regarding the planned curriculum topics and identified content important to EC survivors. We then reviewed existing peer support resources to identify successful delivery models of peer mentoring among cancer survivors. In the second phase, we conducted qualitative interviews with EC survivors to learn about their experiences, factors that influenced quality of life and opinions about a peer support program.

Results: Input from 11 stakeholders resulted in a curriculum for a 5-hour in-person training workshop. Curriculum content included modules on adaptation to cancer, defining the role of a peer mentor, boundary setting, communication skills and self-care. We interviewed 8 male and 2 female EC survivors at an average of 32 months after diagnosis. 9/10 survivors indicated that a one-on-one peer support program could be useful. Respondents felt that information from peers was critical for anticipating side effects, learning about nutrition during treatment and after surgery, and the support of knowing they are not alone. We used these results to revise the training curriculum and to date have conducted 2 peer mentor training sessions with 7 EC survivors. Trainings were well received by mentors in terms of content, length and format.

Conclusions: A peer mentor program appears to be of interest and a needed resource for patients with newly diagnosed EC. We will evaluate the effectiveness of a pilot program by collecting patient-reported quality of life outcomes from the mentors and mentees before and 6-months after mentor-mentee matching.

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NAVIGATING SEXUAL HEALTH IN CANCER SURVIVORSHIP FROM A DYADIC PERSPECTIVE

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Objective: Young adult (YA) breast cancer survivors experience myriad and persistent sexual health difficulties following cancer treatment. Strategies for managing these difficulties often focus on individual cancer survivors, but couples navigate life after cancer as a dyad. Using the Theory of Dyadic Illness Management as a guiding framework, this qualitative study examined how YA couples appraise, communicate about, and manage their sexual health and intimate relationships after cancer.

Methods: We conducted concurrent, individual telephone interviews with 25 YA female breast cancer survivors and their male partners. We utilized a thematic, inductive analysis to examine individual interviews, followed by analysis within- and across-couples to identify dyadic themes. We explored how themes mapped on to the Theory of Dyadic Illness Management to build a conceptual framework specific to the sexual health challenges of YA couples living with cancer.

Results: Our analysis revealed five themes: 1) Shared understanding of physical and psychological challenges of sexual health after cancer; 2) Navigating role shifts and changes to sexual relationship; 3) Getting through it as a team; 4) Maintaining open communication; and 5) Wanting services and support for partners/caregivers and couples. Both survivor and their partners articulated physical (e.g., painful sex, decreased libido) and psychological (e.g., guilt, self-consciousness) challenges to their sexual health in survivorship. Gender differences emerged, where women more often described a sense of “duty” to engage sexually than men did. Couples described a shift in roles throughout survivorship that either strengthened relationships or created a “wedge.” Couples identified “open communication” and strategies for “working as a team” as critical in order to navigate these challenges, but perceived a need for more support and resources. Most participants advocated for couple-focused and online services.

Conclusion: Many YA couples experience complex sexual health challenges after cancer. There is no “one size fits all” solution, as individuals and couples cope with and manage these challenges in different ways. Study results can inform couple-focused strategies to improve the experience for both survivors and their partners, such as creating shared understanding of sexual health after cancer and improving communication skills.

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A POPULATION-BASED EVALUATION OF DELAY IN SURGICAL INVASIVE CANCER TREATMENT

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Purpose: Variations in cancer stage at presentation and treatment care exist in the U.S. by race/ethnicity, geography, and socioeconomic status (SES). Previous studies have found that black and non-Hispanic whites are more likely to be diagnosed at a later stage and delay the initiation of treatment. Early detection of cancer and treatment greatly improves a person's prognosis as well as survivorship outcomes. Specifically delaying surgical treatment for breast cancer (BC) more than 30 days and prostate cancer (PC) more than 90 days may lead to present late-stage cancer diagnosis and delay treatment may affect survival. The purpose of this study was to assess the impact of sociodemographic factors and SES on treatment delay among BC and PC patients.

Methods: A total of 28364 BC and 14294 PC cases were obtained from the Tennessee Department of Health Cancer Registry for patients diagnosed from 2005 to 2015. A logistic regression was utilized to model the likelihood of treatment delay and assess unique contributions of race/ethnicity, SES (a composite area-based measure), demographic variables, and cancer stage.

Results: Median time gap between diagnosis and surgical treatment was 28 and 61 days for BC and PC, respectively. Race/ethnicity was associated with delayed BC treatment; non-Hispanic blacks were at 1.2 odds (95% CI: 1.1-1.3) and Hispanics were at 1.4 odds (95% CI: 1.1-1.9) of delaying compared non-Hispanic whites. Those living in Appalachian counties were 1.2 odds (95% CI: 1.1-1.2) of delaying compared to those living in non-Appalachian counties. Those with distant (0.6 OR; 95% CI: 0.5-0.8) and regional (0.9 OR; 95% CI: 0.9-0.9) cancers were less likely to delay compared to those with localized cancer. SES was associated with delay such that a one-unit increase led to a 1.02-fold increase in the odds of being in the delay category. Concerning PC, relationships were similar to that of BC; however, Hispanics (0.8 OR; 95% CI: 0.5-1.5) did not significantly differ in delay compared to non-Hispanic whites and a one-unit increase in SES led to a 0.60-fold decrease in the odds of being in the delay category. Regardless of cancer type, increased age was associated with reduced treatment delay.

Discussion/Conclusion: The contributions of SES and sociodemographic factors on health disparities may vary depending on the type of cancer. Overall findings are suggestive that being of disadvantaged background (e.g., non-Hispanic black) in Tennessee is likely to increase the delay in surgical cancer treatment compared to those of advantaged backgrounds. Findings support the need to investigate the relationships between race/ethnicity, SES, and receiving timely cancer treatment for BC and PC.

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SHORT AND LONG-TERM BARRIERS AND FACILITATORS OF SSE AMONG INDIVIDUALS WITH MELANOMA

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Background: Melanoma can be lethal if not detected early and treated. Early detection can be facilitated via skin self-examination (SSE) and as such, SSE is part of melanoma follow-up care for individuals with a prior history, who face a life-long risk of reoccurrence. The objective of the current study was to identify short- and long-term predictors of SSE among melanoma survivors to inform future prevention interventions in high-risk groups.

Method: This is an observational study with longitudinal assessments conducted with adult melanoma patients in active follow up care. Socio-demographic and medical information (time since diagnosis, cancer stage) was collected at enrolment. Hypothesized psychosocial predictors of SSE (knowledge about melanoma early detection, intentions and self-efficacy about SSE, distress, and coping) were assessed at 3 months post a standardized dermatological education session on skin cancer preventive behaviours, including SSE.

Primary Outcome Measures: Behavioral outcomes, comprehensive SSE (checking up to 5 body areas in the last 3 months) and optimal SSE (checking the entire body/5 body areas at least monthly in the last 3 months) and were assessed at 3, 12, and 24 months post. T-tests and chi square analyses assessed changes in outcomes from 3-24 months. Linear and logistic regression models examined the association between predictors and the primary outcomes.

Results: Comprehensive SSE did not decrease significantly from 3 (M=2.7, SD=1.1) to 12 (M=2.6, SD=1.2) and 24 months (M=2.4, SD=1.2), with the strongest predictor at all time-points being intentions to perform SSE. Other significant predictors of comprehensive SSE included male sex, SSE self-efficacy, melanoma stage, and reliance on medical advice at 3 months post; and melanoma stage, (lower) education, and SSE self-efficacy at 12 and 24 months post. No other variables were associated with comprehensive SSE.

Optimal SSE was higher at 3 months (59%) compared to 12 (46%) and 24 months (34%) post the standardized dermatological education session. Significant predictors of optimal SSE were SSE self-efficacy, SSE intentions, biological sex at 3 months post; SSE self-efficacy and reliance on medical advice at 12 months post; and (lower) education and SSE self-efficacy at 24 months post. No other variables showed an association with optimal SSE.

Conclusions: This study showed that melanoma survivors in active follow up maintain SSE behaviour over time, but rates of SSE performed in agreement with medical recommendations are higher immediately post intervention and decrease somewhat over a 24-month period. Further, the strongest psycho-social predictors of SSE, intentions and self-efficacy, are highly amenable to change via motivational interviewing and goal-setting health interventions.

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PERCEPTIONS OF FOLLOW-UP CARE AMONG BREAST CANCER SURVIVORS: ASSOCIATIONS WITH COMMUNICATION AND TRUST IN MEDICAL CARE

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It is important to better understand factors that impact beliefs about cancer surveillance in order to increase engagement in follow-up care among breast cancer survivors. Medical mistrust and poor patient-provider communication may be key modifiable factors that are associated with suboptimal surveillance adherence, yet few studies have investigated these factors. Cross-sectional data were analyzed from breast cancer survivors ($N=100$) who received care at community hospital-based oncology clinics. Participants had Stage I-III breast cancer, were two to five years post-treatment, and had a mean age of 62 years ($SD=11$). The sample identified as White (43%), Black (36%), and American Indian (21%). Approximately 30% of the sample had a high school education or less, 41% had vocational training/some college, and 29% had a college degree or higher. Participants completed validated measures of perceived breast cancer surveillance utility (e.g., efficacy, benefits and costs of follow-up care) and mammography benefits, communication with health care providers, trust in physician, and medical mistrust. Separate hierarchical linear regressions were conducted for perceived surveillance utility and mammography benefits. Each model included communication with health care providers, trust in physician, and medical mistrust as independent variables. Covariates were included based on bivariate analyses. Provider communication, trust in physician, and medical mistrust explained 30% of the variance in perceived surveillance utility, controlling for race and education, $F(7,92)=9.48$, $p<.001$. Race and education did not explain significant variance in perceived utility. Provider communication, physician trust, and medical mistrust did not account for significant variance in perceived mammography benefits, controlling for education, $F(5,94)=1.90$, $p=.10$. Having a college degree or more education explained significant variance in perceived mammography benefits ($\beta=.23$, $p=.04$, $s^2=.04$). Results suggest that breast cancer survivors' beliefs about surveillance utility are associated with quality of provider communication, trust in physician, and medical mistrust. Improving provider communication and trust may be critical to increase perceived cancer surveillance utility and in turn, improve surveillance adherence among breast cancer survivors. Further research is needed to better understand perceived mammography benefits, considering education and additional psychosocial predictors.

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A SYSTEMIC REVIEW OF SURVIVORSHIP CARE PLAN USE BY RACIAL AND ETHNIC MINORITY BREAST CANCER SURVIVORS

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Purpose: Racial and ethnic disparities in breast cancer survival rates persist in the United States. While breast cancer 5-year survival rates for non-Hispanic White women are 90%, for African-American and Hispanic women, survival rates are 80% and 88%, respectively. Optimizing post-treatment survivorship care communication, especially through survivorship care plans (SCPs), may improve survivorship rates for minority breast cancer survivors. Understanding associated nuances and concerns of SCP implementation to racial and ethnic minority women is critical to address these disparities. The purpose of this systematic review is to thematically assess the implementation of survivorship care to female racial/ethnic minority breast cancer survivors as it relates to their preparation for survivorship care, the preferred practices for the delivery of a SCP, and the associated content to improve an understanding of survivorship care.

Methods: We screened studies from PubMed, Ovid-Medline, and CINAHL databases through April 2019, and identified eligible manuscripts using the PRISMA guidelines for a systematic review. Eligible manuscripts investigated breast cancer post-treatment survivorship care from study samples with at least 25% minority (e.g. African-American/Black, Hispanic, Asian) representation. Themes were assessed for survivorship care implementation for racial/ethnic minority breast cancer survivors. This review only extracted and analyzed information related to the post-treatment to end-of-life period of breast cancer survivors.

Results: Of 14 selected manuscripts, the investigations included diverse study designs that reported findings from over 12 different ethnic groups. Four key themes emerged. The first theme demonstrates that survivors were uncertain about survivorship as a stage in the cancer continuum; as some survivors were told they had transitioned to survivorship care while receiving treatments. Second, describes an approval of- and need for- SCPs and related materials. Third, survivors reported uncertainty about managing survivorship care resulting from confusion about recurring cancers and recommended follow-up clinic visits. Fourth, survivorship care information should be delivered in a healthcare setting with more care coordination, quality of life, and culturally relevant content in SCPs.

Conclusion: Identified themes revealed post-treatment survivorship communication and care coordination is often confusing. This uncertainty has implications on self-care management and adherence to necessary care. Findings provide insight on likely strategies to improve post-treatment communication and ultimately survivorship outcomes for minority breast cancer survivors.

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DEVELOPMENT, PRODUCTION, AND ACCEPTABILITY OF A THEORY-BASED COMIC BOOK FOR HPV VACCINE PROMOTION FOR EAST AFRICAN ADOLESCENTS

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Background: HPV vaccine uptake is low among East African adolescents in the US. Adolescents' preferences influence vaccine decisions, yet few interventions exist that address adolescents' beliefs about HPV vaccines. Comic books are promising tools for communicating HPV vaccine information because it can both educate and entertain. We describe a multi-step process on how to create and evaluate a theory-based comic book among East African adolescents.

Methods: The comic book development was a multi-step process that included formative research with focus groups, creation of theory-based messages, and assessment of the comic book acceptability. First, we convened three separate focus groups in Somali, Amharic and Tigrinya (n=30) with East African mothers in Washington State to identify themes to inform the production of the comic book. Second, we conducted message mapping to operationalize the themes into theory-based messages. Third, we assessed the acceptability of the comic book, appeal, and message relevance among East African adolescents aged 14-17 years (n=134) using open-ended questions.

Results: The comic book incorporated socio-cultural themes, information needs, and suggestions for information flow that emerged from the focus groups. The comic book story followed a plot that focused on an adolescent main character and consisted of three scenes: 1) adolescent HPV vaccine education by a health professional in a classroom setting; 2) discussion of HPV vaccine beliefs and experiences among adolescent peers; and 3) communication with parents about HPV vaccine and intent for vaccination. Five themes emerged on comic book acceptability: overall appeal, structure, characters, story and content, and messages. The comic book appealed positively to most adolescents (92/111 comments; 82.9%). Comments about comic book structure noted liking the graphics (17/57; 29.8%) and ease of comprehension (22/57; 38.6%). Adolescents responded positively to ethnic representation (24/51; 47.1%), diversity of the characters (7/51; 13.7%), the story's educational focus (92/96; 97.9%), the use of humor (34/96; 35.4%), and flow of information among peers (31/96; 32.3%). The importance of HPV vaccines (82/98; 83.7%), seeking social support (43/98; 43.9%), and information about HPV and cancer (33/98; 33.7%) were messages noted as most important.

Conclusion: We used a multi-step process to create a culturally-tailored comic book on HPV vaccines that East African adolescents found to be both educational and entertaining. Further evaluation will focus on the impact of the comic book on HPV vaccination knowledge and intentions.

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DAILY SOCIAL INFLUENCES ON PHYSICAL ACTIVITY AMONG MIDLIFE WOMEN WITH CVD RISK: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Midlife women with elevated cardiovascular risk experience specific social influences on physical activity (PA), including perceptions of social events (i.e., positive/negative interactions) and social comparisons (i.e., self-evaluations relative to others). Existing data on these influences describe differences between individuals; although useful, this masks within-person change and temporal relations between social experiences and PA. Such information could inform improvements to tailored PA programs by targeting for whom and when specific interventions are needed. The current study used ecological momentary assessment (EMA) to capture relations between midlife women's perceptions of social experiences and PA in their natural environments. Participants were 40 midlife women with elevated cardiovascular risk (e.g., high blood pressure; MAGE=51, MBMI=34.4 kg/m²) who engaged in EMA for 10 days. Social perceptions were assessed via electronic surveys (5 semi-random times per day) and PA was assessed via waistband accelerometer. Daily summaries were calculated for the quantity/quality of social interactions, number/type of social comparisons, sedentary time, and time spent in light and moderate-to-vigorous activity (MVPA). Results showed high compliance with EMA (88% surveys, 98% accelerometer wear days) and significant day-to-day variability in social experiences and PA (ps< 0.001). One additional positive interaction per day was associated with significantly more sedentary time and less light PA. In contrast, a 1-unit increase in the intensity of negative interactions (rather than number of events) was associated with 23 fewer minutes of sedentary time per day. Across types of comparison, women engaged in 7 additional minutes of light PA, 4 additional minutes of MVPA, and 27 fewer minutes of sedentary time on days without (vs. with) comparisons. However, an increase of 1 downward comparison per day (i.e., comparing to someone "doing worse") was associated with 4 additional minutes of MVPA and 12 fewer minutes of sedentary time per day (all ps< 0.05). Findings show that EMA is sensitive to daily variation in midlife women's social perceptions and PA and reveals important daily relations. Specifically, that certain social experiences may facilitate their PA (e.g., downward comparisons), whereas others may present barriers (e.g., positive interactions). Downward comparisons may motivate women to continue healthy habits such as PA to prevent becoming like a worse-off other; positive interactions may distract from healthy habits, though they confer other health benefits. Further examination of time-sensitive relations between social experiences and PA will help to identify optimal targets for PA interventions that are tailored to the needs of midlife women.

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POSTTRAUMATIC DEPRECIATION PREDICTS REPEAT HOSPITALIZATION IN CONGESTIVE HEART FAILURE PATIENTS

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The health benefits of perceived posttraumatic growth (PPTG) for cardiac patients have been widely touted, although the validity of these claims has yet to be established. Some evidence suggests that, in cardiac patients, PPTG is related to greater health services engagement, reduced likelihood of another cardiac event, and lower levels of heart attack morbidity. While PPTG is an attractive construct, its predictive validity is inconclusive, as many measures elicit a positive response bias. Furthermore, research demonstrates that individuals can experience both positive and negative changes in the face of life-threatening illnesses. The construct of posttraumatic depreciation (PTD; negative life changes resulting from a stressful life event) has yet to be studied as a risk factor for poor health-related outcomes in the context of cardiac conditions, such as congestive heart failure (CHF). Frequency of repeat hospitalization is a particularly important outcome among CHF patients, given its economic, medical, and psychological toll. Of note, no study has examined whether and how PTD affects repeat hospitalization among CHF patients. The present study seeks to fill this gap by testing the following hypotheses with a longitudinal sample of 191 CHF patients (64% male; $M_{age}=68.6$ years): (H1) lower PPTG and greater PTD at baseline will predict a greater likelihood of hospitalization at 6-month follow-up and a greater number of CHF-related hospitalizations in the subsequent 5 years; and (H2) lower PPTG and greater PTD at baseline will be particularly detrimental for patients who had a CHF diagnosis for a longer time. Hierarchical logistic and linear regression with moderation analyses were conducted. PPTG and PTD showed a moderate inverse relationship ($r=-.29$, $p<.001$). H1 was partially supported in that greater PTD predicted a greater likelihood of hospitalization at 6-month follow-up ($OR=4.32$, 95% $CI[1.26, 14.85]$, Wald $\chi^2=5.39$, $p<.05$; Nagelkerke $R^2=.11$) and a greater number of CHF-related hospitalizations at 5-year follow-up ($\beta=.19$, $p<.05$; $R^2=.07$, $F(5,175)=2.80$, $p<.05$), after accounting for age, gender, and ejection fraction. However, PPTG was not a significant predictor of either hospitalization outcome. Furthermore, H2 was partially supported in that greater PTD was particularly deleterious for patients diagnosed with CHF for a longer time in predicting the total number of CHF-related hospitalizations by the 5-year follow-up ($\beta=.02$, $p<.01$; $R^2=.16$, $F(7,162)=4.25$, $p<.001$). Length of time for diagnosis did not interact with PTD to affect the likelihood of hospitalization at 6 months. Results suggest that, while positive and negative changes related to CHF are not mutually exclusive, PTD may be a more important psychosocial intervention target in terms of reducing hospitalization risk, particularly for patients diagnosed with CHF for a longer time.

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IMPROVING MEDICATION ADHERENCE AMONG PATIENTS WITH HYPERTENSION: THE ROLE OF USING HEALTH BEHAVIORAL THEORIES

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Background: One in three American adults has hypertension. The control of this highly prevalent disease is still far from adequate. Using antihypertensive medication is the most efficient strategy for hypertension control. However, adherence to antihypertensive medications is a major problem in the treatment of hypertension. About half of the patients who use antihypertensive medications are not adherent to their treatment. Several randomized clinical trials (RCTs) interventions have endeavored to improve adherence to antihypertensive medications, and some used health behavioral models/theories. However, the utility of using health behavioral models/theories in improving adherence to antihypertensive medications remains unknown.

Objectives: The objectives of this systematic review are to describe RCT interventions to improve antihypertensive medications adherence that used behavioral theories; assess type and extent of used theory; discuss the implications for practice and research.

Methods: This systematic review was prepared based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The PubMed, Scopus, Ovid MEDLINE, CINAHL, PsycINFO databases were searched for randomized clinical trial articles published in English, from 1979 to 2019. Two independent reviewers searched, screened abstracts and full-text of articles, extracted data, assessed risk of bias and use of model/theory by using the Theory Coding Scheme.

Results: A total of 815 articles were identified, 632 abstracts were screened, and 34 full-text articles were fully reviewed. The final review included 13 studies with 7,030 participants. The interventionist profession was nurse or pharmacist in the all included studies. Motivational Interviewing, Social Cognitive Theory, and Self-Regulation Model were the most common types of models/theories. Six studies used a single model/theory, and four studies measured constructs of model/theory. Among the included studies, two studies reported significant improvement in medication adherence.

Conclusions: Health behavioral models or theories can improve medication adherence among adults with hypertension, but this review did not find extensive support. More RCTs are needed that utilize health behavioral models/theories to their full extent in interventions to improve medication adherence among adults with hypertension.

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ENABLE CHF-PC: EARLY PALLIATIVE CARE RANDOMIZED TRIAL FOR PATIENTS WITH ADVANCED HEART FAILURE

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Background: Palliative care (PC) for advanced stage heart failure (HF) is recommended by national organizations and guidelines, however there are few tested integrated HF PC models.

Research Objectives: Determine the effect of a nurse coach-led, PC telehealth intervention (ENABLE CHF-PC) on advanced HF patients' quality of life (QOL) and mood over 32 weeks.

Methods: Intervention (INV) vs. usual HF care (UC) randomized clinical trial (August 2016-October 2018) at a tertiary academic and Veteran's Affairs Medical Center serving high proportions of rural and African American (AA) patients. NYHA Class III/IV HF patients received UC or ENABLE CHF-PC consisting of an in-person PC consultation and 6 weekly nurse-coach psychoeducational telephonic sessions and monthly follow-up for 1 year. Primary outcomes were QoL (Kansas City Cardiomyopathy Questionnaire [KCCQ] & [FACIT-pal-14]) and mood (Hospital Anxiety Depression Scale [HADS]) over 32 weeks.

Results: Of 415 patient participants, mean age was 64, 53% male; 55% AA; 26% rural; 46% < high-school education; 75% reported having a caregiver; 47% reported reduced QoL (KCCQ clinical summary score ≤ 50). Over 32 weeks, trends favored INV group (mean KCCQ improved 5.1 points (± 1.4 SD) INV versus 2.7 (± 1.3) UC; mean FACIT-pal-14 improved 1.8 (± 0.6) INV vs 0.9 (± 0.6) UC; HADS-anxiety decreased equally in both groups (± 0.1) and HADS-depression decreased -0.9 (± 0.3) INV vs -0.5 (± 0.2) UC; however there was not a clinically significant improvement in INV group QOL and mood compared to UC (all p's > 0.05).

Conclusion: The lack of a clinically significant improvement in the INV relative to UC group may be explained by relatively high mean baseline QOL and mood scores. The high proportion of AA participants suggests acceptability of early PC in this population.

Implications: This study can inform timing and PC use in minority populations. Targeting HF patients with worse QOL/mood may be the most effective use of early palliative care.

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THE ASSOCIATION BETWEEN HEALTH LITERACY AND MORTALITY IN THOSE WITH HEART FAILURE

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Introduction: Over 6 million Americans over the age of 20 are currently diagnosed with heart failure, which imposes complex self-care regimens for patients to manage. The Heart Failure Society of America has recommended the consideration of health literacy in heart failure management and encourages tailoring heart failure intervention strategies around health literacy. Low health literacy can impair heart failure management, and an association between low health literacy and increased mortality has been reported. The current study examined the association between tested health literacy and mortality in heart failure patients using two tests of health literacy and examined the role of cognitive functioning in that relationship in patients with heart failure. It was hypothesized that health literacy scores would predict all-cause mortality in those with heart failure and that cognitive functioning would attenuate the relationship between health literacy and mortality in heart failure.

Methods: Study participants were 372 patients with systolic heart failure recruited from two separate hospital systems in Northeast Ohio. Health literacy was tested using the Rapid Estimate of Adult Literacy in Medicine [REALM] and the Medical Term Recognition Test [METER]. Cognitive functioning was tested using the Modified Mini-Mental State [3MS]. Both cardiovascular and all-cause mortality data were obtained through December 2014, providing a median 2.9-year follow-up on death records.

Results: Multiple cox proportional hazards regressions were used to analyze whether the METER, REALM, and the 3MS predicted mortality in those with heart failure. Neither METER nor REALM scores predicted mortality. However, cognitive functioning did significantly predict mortality in regression models using both the METER ($B = -.07$; HR, .94 [95% CI, .89-.98]; $p < .01$) and REALM ($B = -.07$; HR, 0.94 [95% CI, .90-.97]; $p < .01$). Cognitive functioning also improved total model fit in both the METER ($\Delta\chi^2 = 9.20$, $p < .01$) and REALM ($\Delta\chi^2 = 9.77$, $p < .01$) models.

Discussion: When cognitive function was considered, no relationship between health literacy and mortality was observed. Further research is needed to determine the boundary conditions for the association between health literacy and mortality in those with heart failure.

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HEALTH LITERACY AS A PREDICTOR OF ILLNESS BELIEF ACCURACY AMONG ADULTS WITH HEART FAILURE

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Introduction: Health literacy is associated with health knowledge and education, and lower health literacy is associated with less accurate illness beliefs among patients with a variety of chronic health conditions. In a 2017 study by Kumar and colleagues, among patients presenting to the emergency department with acute heart failure (HF), lower health literacy was associated with lower accuracy of HF illness beliefs. We sought to explore previous findings in a larger sample of community-dwelling adults with HF with reduced ejection fraction (HFrEF) recruited from cardiology clinics.

Methods: Adults with HFrEF (N=300) completed two measures of health literacy, the Rapid Estimate of Adult Literacy in Medicine (REALM) and Medical Term Recognition Test (METER). Scores were combined to create an index score of health literacy. Patients also completed the Survey of Illness Beliefs in HF to assess the accuracy of illness beliefs about the treatment and prognosis of HF. Hierarchical linear regression was used to determine the relation between health literacy and accuracy of illness beliefs controlling for sex, age, race, education level, and illness comorbidities.

Results: Age, race, education, and illness comorbidities had significant effects on illness belief accuracy ($F [5, 294] = 5.65, p < 0.01, R^2 = 0.09$). After controlling for these variables, health literacy improved total model fit ($F [1, 293] = 4.78, p < 0.05, R^2 = 0.10$) and was a significant positive predictor of accuracy on the Survey of Illness Beliefs ($B = 0.02 [p < 0.05]$). The mean score on the Survey of Illness Beliefs was 2.91 (SD = 0.30), indicating overall inaccurate illness beliefs within the sample.

Discussion: Lower health literacy was associated with less accurate HF illness beliefs. These findings extend prior research to a larger sample of outpatients with HFrEF, broadening the implications of Kumar and colleagues' work. Given that health literacy predicts self-care quality among patients with HF and that accurate illness beliefs are associated with better treatment adherence among patients with HFrEF, these findings may have implications for interventions that alter perceptions associated with inaccurate illness beliefs to improve HF treatment outcomes.

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DEVELOPMENT AND VALIDATION OF A PARENTAL EMPOWERMENT SCALE AMONG HEAD START PARENTS

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Empowerment is the ability to navigate one's own resources and relationships, and it likely influences health behavior change. However, few health-related empowerment measures for parents are available and/or these lack thorough validity and reliability testing. This is important given the emerging success of empowerment-focused, family-based childhood obesity interventions. Our research team developed a survey to measure health-related parental empowerment using theoretical constructs from empowerment-relevant theories. The survey included 21 items across 3 hypothesized dimensions including resource empowerment, critical awareness, relational empowerment. This study tested the content validity of the scale in a low-income sample of parents with preschool-aged children using principal component analysis (PCA), exploratory factor analysis (EFA), and confirmatory factor analysis (CFA), respectively. The instrument was administered to a sample of parents (n=826; 87% mothers) from 23 Head Start centers in Greater Boston. The resulting data were randomly split into two equal samples and a combination of exploratory and confirmatory analyses were used to test the scale. Using the first half of the sample, Principal Component Analysis yielded three component factors (eigenvalues = 8.30, 2.90, 2.00). EFA results indicated all items loading significantly onto each of the hypothesized parental empowerment dimensions ($\beta > .60; p < 0.01$). Individually, indicators in the resource empowerment dimension explained 23.77% of its variance, indicators in the critical awareness explained 23.12% of its variance, and indicators in the relational empowerment explained 16.00% of its variance. The hypothesized factor structure for three sub-scales was subsequently confirmed using confirmatory factor analysis with the second half of the sample ($\beta > .55; p < 0.01$). Fit indices met minimum criteria (CFI = .94-.99; RMSEA = .04-.10; SRMR = .01-.04) and all scales demonstrated acceptable internal consistency ($\alpha = .83-.89$). Results support the initial validity of a brief survey measuring parent empowerment for child health in a sample of low-income parents of preschoolers. Future research will examine the validity of the factor structure across language and parent gender along with the predictive validity of the scale in reference to behavior change.

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IMPACT OF PARENTING STYLES ON ADOLESCENT HEALTH BEHAVIORS

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Objective: The primary objective was to examine profiles of adolescent perceptions of caregiver physical activity and dietary parenting styles and examine how these profiles relate to adolescent fruit/vegetable intake and daily physical activity.

Methods: A secondary analysis was conducted from the FLASHE study. Adolescents (N= 1737) completed web-based surveys of physical activity and dietary behaviors. They also answered questions on physical activity and dietary parenting styles. Latent profile analysis was conducted to identify patterns of parenting styles. The three-step approach was used to examine predictors (i.e. age, gender of the adolescent, gender of the caregiver) and outcomes (i.e. adolescent physical activity and fruit/vegetable intake) of profiles.

Results: A 4-class solution was determined to be the best fit to the data. The uninvolved parenting style profile (9.4%) showed significantly less adolescent fruit and vegetable intake and lower levels of physical activity than all other profiles. The encouraging but less collaborative profile (14.3%) and the moderately encouraging and collaborative profile (46.3%) did not have significantly different fruit and vegetable intake and physical activity levels from each other but both showed higher levels than the uninvolved. The highly involved parenting style profile (30.0%) had higher adolescent fruit and vegetable intake and demonstrated more physical activity than all other profiles.

Conclusion: The results of the analysis revealed important implications supporting existing literature that parenting styles play a role in adolescent health behaviors such as diet and physical activity. This information should be considered when developing interventions aimed at improving adolescent health behaviors.

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INFLUENCE OF PARENT SUPPORT AND MODELING & ADOLESCENT PSYCHOSOCIAL CONSTRUCTS ON ADOLESCENT PHYSICAL ACTIVITY & WEIGHT

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Obesity rates continue to rise in the US with adolescents (12-19 years old) having the highest prevalence (20.6%) across all age groups. Research highlights the importance of physical activity (PA) in reducing adolescent obesity disparities. While factors at multiple levels of influence affect adolescent PA behaviors, parents are particularly influential at the interpersonal level. They are typically adolescents' first exposure and gatekeepers to both direct and indirect PA behaviors through their support and modeling of PA. These parent factors as well as individual-level factors such as adolescent self-efficacy and their perception of parent support affect adolescent PA-related behaviors. However, they have been less examined as well as health outcomes such as adolescent weight.

Using parent-adolescent dyad data (n=1644) from the Family Life, Activity, Sun, Health, and Eating (FLASHE) study, associations between parent PA support and PA modeling and adolescent moderate-to-vigorous physical activity (MVPA) and weight (BMI z-scores) were examined. All data were self-reported and collected using online surveys. Structural equation modeling was used to examine the pathways and associations between factors.

Parent PA modeling and adolescent weight (Est.=−0.036; p =0.001) as well as modeling and adolescent MVPA (Est.=0.040; p< 0.001) were statistically associated via a pathway mediated by self-efficacy. Adolescent PA self-efficacy also was associated with adolescent MVPA (Est.=0.035; p< 0.001) and adolescent weight (Est.=−0.105; p< 0.001) independent of parent variables. Parent PA support was directly associated with adolescent weight, but in a positive direction (Est.=0.117; p=0.007). No statistically significant associations were seen with adolescent perception of parent PA support or between adolescent MVPA and weight.

Overall, these findings can be used in multiple ways to not only assess the influence parental factors have on adolescent MVPA and weight, but to guide the type of components used in behavioral interventions. In particular, the findings suggest using parent PA modeling as well as adolescent PA self-efficacy as targets for behavioral interventions aimed at increasing adolescent MVPA and lowering adolescent weight. Ultimately, the association of parental factors with adolescent psychosocial constructs, behaviors, and health outcomes highlights the importance of using family-based interventions to positively impact the health of adolescents and their families.

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A RANDOMIZED COMPARISON TRIAL ADDRESSING FAMILY EATING PRACTICES: AN INTERACTIVE FAMILY-BASED HEALTHY WEIGHTS PILOT STUDY

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Background: Childhood obesity is one of the most widespread public health challenges associated with unhealthy dietary habits. Family-based interventions can be an effective strategy to manage childhood obesity. However, numerous factors (e.g. community needs, program adaptability, and available resources) are often overlooked in current family-based interventions. Thus, our team worked with local stakeholders to develop the Family Healthy Living Program (FHLPP), a “made in B.C.” evidence-informed 10-week intervention representing the local context in terms of its current clinical and public health messaging.

Objective: Evaluate the efficacy of the FHLPP in improving self-reported nutrition outcomes for parent feeding practices and children's dietary behaviors.

Methods: Participants were parents (n=87) and their children (n= 97) aged 8-12 years who had a BMI ≥ 85th percentile for age and sex. Families were randomized to either the 10-week FHLPP or a waitlist control group. The FHLPP provided a blended intervention consisting of 10 weekly sessions, 4 community activities and an online platform with interactive activities. Validated self-report questionnaires were used to evaluate parent and child nutrition outcomes, which include: parent feeding practices, the home food environment, family healthy eating (HE) habits and identity, regulation of child's HE behaviors and parents' cooking self-efficacy. The child nutrition outcomes include dietary behaviors, attitudes, outcome expectations and self-efficacy related to HE. Intention-to-treat protocol were used. Repeated measures analysis of variance (ANOVA) (2x2) was used to compare with-in and between-group changes.

Results: Fifty-four families completed the study. Relative to controls, parents in the intervention condition significantly improved their parent feeding practices (mean= 6.01, SD = 0.92, $d = 0.60$, $p = 0.04$), total parent support of child's HE (mean= 10.63, SD=1.19, $d = 0.63$, $p = 0.04$) and regulation of child's HE (mean= 14.02, SD= 3.59, $d = 0.65$, $p = 0.04$) at follow up. No between group changes in child nutrition outcomes were observed.

Conclusions: Family-based interventions tailored to a community's needs and resources can improve parent feeding practices and parents' ability to support their children's HE behaviors. Nonetheless, future research should explore innovative engaging delivery agents that educate families about ways to improve dietary behaviors and create a home environment that supports children's HE behaviors.

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ADVERSE CHILDHOOD EXPERIENCE AND CHILD'S MENTAL HEALTH: EXAMINING THE ROLE OF PARENTING STRESS AND FAMILY RESILIENCE

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Introduction: Adverse childhood experiences (ACE) have a robust impact on children's health outcome. However, it is less clear how parental stress and resilient resources affect the ACE-health relationship. The study examined the associations between ACE and child's mental health and behavioral disorders and tested the mediating and moderating role of parental stress and family resilience.

Methods: This study used data from the 2016-17 National Survey of Children's Health (NSCH). The analysis included 44,684 children aged 6-17 years. Outcomes were binary measures of whether a child was ever diagnosed with 1) any mental health issues and 2) ever diagnosed for and currently have any attention-deficit/hyperactivity disorder (ADHD). The analysis used survey weights and controlled for potential confounders.

Results: There is a strong association of ACE with both outcomes of children's mental health. In the adjusted models, each additional ACE score was associated with increased risk for any mental health issues (OR=1.33, $p < 0.01$) and ADHD (OR=1.21, $p < 0.01$). The inclusion of parental stress accounted for a mediation of 62% of the total effect of ACE on any mental health and 26% of the total effect of ACE on ADHD outcome. The associations of ACE with any mental health and ADHD were modified by the family resilience and connection index (FRCI). The associations between ACE and mental health outcomes were less strong for children with higher scores in FRCI.

Conclusions: The results demonstrated that parental stress acts as a potential mechanism through which ACE impacts a child's mental health. Family resilience and connection appears to buffer the negative effect of ACE. These results have implications for clinical practices and intervention programs with children and adolescents experienced severe child abuse and maltreatment.

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YOUNG CHILDREN'S KNOWLEDGE OF THE FARM-TO-TABLE CYCLE

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Young Children's Knowledge of the Farm-to-Table Cycle

Childhood obesity is at its highest rate in history (Suchindran, North, Popkin, & Gordon-Larson, 2010). Having knowledge of food is the base to choosing between healthy and unhealthy items, which is one form of behavioral obesity intervention (Oowski, Goranzon, & Fjellstrom, 2012; Sigman-Grant et al., 2014). In order for children to become healthier, food health education needs to begin early and be reiterated often. Teaching children about food allows them to choose healthier items and have a more complete understanding about what is beneficial for their bodies (Contento, Randell, & Basch, 2002; Wiseman & Harris, 2015). Parents report a clear desire for their children to have knowledge of food origins, but these conversations do not always happen (Bray, Zambrano, Chur-Hansen, & Ankey, 2016). When asking children about the health of various foods, especially by the age of five or six, they are generally able to distinguish between things that are healthy and unhealthy (Story, Nannery, & Schwartz, 2009). However, the literature is lacking in the assessment of child knowledge of food origins.

The current pilot study used visual aids to evaluate children's knowledge of the farm to table cycle (i.e., identification of foods on the farm, as a base ingredient, and at the store). Participants (fifteen children, Mage = 7.10 (1.49), range = 4-10, 60% male, mean parent BMI = 29.14 (9.40), 73% of parents higher than high school education) in the American Midwest were presented with three versions of 10 types of non-meat based foods. The three stages showed the food (1) on the farm when naturally grown, (2) as a simplified ingredient, and (3) on the shelf of a grocery store. Participants were given a picture of the grocery product (yogurt) and asked to choose the original farm photo of the product (cow). They were then asked what the product looked like in between the farm and grocery photo (milk). Each photo was chosen from a group of three randomly selected options. The number of correct and incorrect matches were documented. Participants correctly matched a food to its three pictures 85.19% of the time, with no relationship found between age and correctness ($r = -3.89, p = .152$).

This pilot study of a new, hands-on, method of food origin assessment shows that children may be more aware of food origins than previously thought. This method may work to stimulate food origin conversations with families and enhance health-based conversations with young children.

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3-YEAR DEVELOPMENTAL TRAJECTORIES OF BEHAVIORAL WELL-BEING IN ADOLESCENTS AND CARE STAFF RESIDING IN RESIDENTIAL CARE HOMES

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Introduction: Young residents in child care homes are prone to psychological distress out of their complex background in their original families and are in need of intensive counseling service. Social workers in the care homes are often preoccupied with enormous workloads to work with the residents for in-depth emotional issues. Under the existing service, residents have to wait for a long time to see a clinical psychologist. We examines the efficacy of adding a counselor post in foster care home setting on the residents and existing staff in Hong Kong.

Research Design: This longitudinal study was conducted in collaboration with four local NGOs in Hong Kong from 2016 to 2019. A total of 113 social workers and 381 residents aged from 5 to 18 were recruited in the residential care homes from the NGOs. The four counselors hired in the NGOs provided continuous individual counseling sessions for counselees who completed the Counselor Rating Form before and after counseling. Assessments were performed on the residents' behavioral problems via their superintendents and levels of burnout and role ambiguity/conflicts via validated measurement scales. Latent growth modeling evaluated the temporal changes in the variables.

Results: The counselees reported a significant increase ($d = 0.51, p < 0.01$) in counselor rating. Residential care workers displayed overall stable trends in role ambiguity/conflict and burnout during the study period with significant inter-individual variations in temporal changes. Controlling for baseline, changes in role ambiguity/conflicts significantly and positively predicted changes in work burnout ($\beta = 0.26 - 0.45, p < 0.01$) and client burnout ($\beta = 0.30 - 0.42, p < 0.01$). The residents displayed piecewise decreasing trajectories in internalizing, externalizing, and total problems across the ten assessment waves, with substantial declines over the first 9 months.

Conclusions: The current findings suggest that the counseling service could have a beneficial effect in reducing the counselees' emotional and behavioral problems and ameliorating social workers' levels of burnout over time. Future studies are needed to evaluate the linkage between temporal changes in staff burnout and counselees' behavioral problems.

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EATING NETWORK CHARACTERISTICS OF LOW-INCOME MOTHERS, AND LINKS TO DIETARY HABITS

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Introduction: Unhealthy dietary patterns are prevalent in low-income populations and cause many adverse health outcomes. The social context of eating embodies many sources of influence on dietary patterns, however, less understood is the role of eating partners—i.e., one's "eating network"—on dietary intake and automated eating habits. This study uses social network analysis to examine low-income mothers' eating networks, exploring how eating network size, closeness, and support, are associated with food intake and habits.

Methods: Data are from an ongoing childhood obesity prevention trial that enrolls low-income mothers and their infants. These analyses focus on mothers' (N=32; M age=28; 74% Latina) frequency and habit strength (Gardner et al., 2012) of sugar-sweetened beverage, fried food, fruit, and vegetable intake as outcomes; and mothers' social network characteristics as predictors. Standard personal network measures were used to list and characterize 15 of the mothers' social ties, and compute: the proportion of their network who were eating partners (i.e., eating network), and the proportion of their eating network that were family, emotionally close ties, and providers of health support. Regression models tested for associations between network characteristics and (1) mothers' food intake, and (b) habit strength, for each food type, controlling for age and weight status.

Results: Mothers with larger eating networks consumed significantly less fried food ($p=0.03$) and had weaker fried food habits ($p=0.04$) and stronger vegetable intake habits ($p=0.05$). Within the eating network, having a greater proportion of family was associated with stronger fruit intake habits ($p=0.04$), and a greater proportion of close ties was associated with weaker fried food habits ($p=0.04$). Within the eating network, increased health encouragement was associated with lower fruit ($p=0.01$) and vegetable ($p=0.04$) intake.

Conclusion: These findings align with previous research and theory, and suggest that for low-income mothers, having larger eating networks is associated with stronger and healthier dietary habits. Having more family and close ties among eating partners is also associated with some healthier habits, and eating partners appeared to be responsive to unhealthy eating patterns (low fruit and vegetable intake) by providing health encouragement. Family-based eating interventions may want to leverage and foster mothers' social networks.

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COMMUNITY VIOLENCE IN THE BAHAMAS: UNCOVERING THE IMPACT OF SHAME AND VENGEFULNESS

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The negative psychological and physical health outcomes associated with community violence have become an increasing research emphasis for social scientists. Communities in the Bahamas have endured notable suffering from the effects of community violence, especially since the 1980's cocaine epidemic. This study is a secondary analysis of a larger, collaborative project that explored the effects of shame on social rehabilitation in 30 community-based groups in the Bahamas. Participants were 57% women and ranged from 11-79 years of age. The aim of this study was to examine whether a hypothesized internal process (e.g., shame) would influence one potential correlate of community violence (i.e., hostility) depending on the degree of vengefulness and forgiveness. Two moderation analyses were conducted to test whether vengefulness and forgiveness would moderate the relationship between shame and hostility. After controlling for age and education, internal shame ($b = .15$, $t(361) = 7.52$, $p < .001$; $b = .18$, $t(361) = 8.61$, $p < .001$) and vengefulness ($b = .34$, $t(361) = 5.19$, $p < .001$) yielded significant direct effects on hostility. Forgiveness did not have a direct effect on hostility. While vengefulness was found to significantly moderate the relationship between shame and hostility ($\Delta R^2 = .006$, $\Delta F(1, 361) = 3.87$, $b = -.007$, $t(361) = -1.97$, $p < .05$), forgiveness was not found to be a significant moderator. Future studies might explore how addressing shame and vengefulness might enhance interventions aimed at equipping communities to address the harmful effects of violence.

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SPIRITUAL WELL-BEING BUFFERS THE EFFECT OF ANXIETY ON PHYSICAL WELL-BEING IN NEWLY DIAGNOSED CANCER SURVIVORS

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Background: Individuals newly diagnosed with cancer are at risk for heightened anxiety and declining physical well-being. Anxiety may be lessened among cancer survivors who report experiencing a greater sense of life meaning and being at peace, subcomponents of spiritual well-being. To date, the protective nature of spiritual well-being in early cancer survivorship has been understudied.

Objective: To assess the extent to which spiritual well-being moderates the relationship between anxiety and physical well-being in a diverse, community-based cohort of newly diagnosed cancer survivors.

Methods: A secondary data analysis was conducted using the Measuring Your Health (MY-Health) study cohort. MY-Health recruited cancer survivors within 6-13 months of diagnosis with colorectal, lung, NHL, breast, gynecologic, or prostate cancers (n=5506) through 4 SEER cancer registries in 3 states. Life meaning and peace were assessed using the 8-item subscale of the Spiritual Well-Being Scale (FACIT-Sp-12). Anxiety was measured with a 11-item PROMIS® Anxiety short form, and physical well-being was assessed using the 7-item subscale of the Functional Assessment of Cancer Therapy-General (FACT-G). Multiple linear regression models were used to assess relationships among variables. A moderation analysis was conducted using PROCESS (Model 1; Hayes, 2019).

Results: Life meaning/peace was negatively correlated with anxiety, $b = -0.56$ ($p < 0.001$) and positively correlated with physical well-being, $b = 0.43$ ($p < 0.001$) after adjusting for race, education, income, and age. A significant interaction between life meaning/peace and anxiety was found ($p < .001$) after including covariates, such that the magnitude of the negative relationship between anxiety and physical well-being decreased as life meaning and peace increased. Specifically, those lower (-1 SD) in life meaning and peace demonstrated a stronger negative relationship between anxiety and physical well-being, $b = -0.34$ ($p < .001$), whereas those higher (+1 SD) in life meaning and peace demonstrated a weaker (though still significant) negative relationship between anxiety and physical well-being, $b = -0.25$ ($p < .001$).

Conclusion: Clinical interventions that foster a greater sense of life meaning and peace in newly diagnosed cancer survivors may protect against declines in physical well-being associated with early cancer survivorship. Given that anxiety often cannot be fully attenuated in newly diagnosed cancer survivors, further research is needed to assess how spiritual well-being may buffer the negative effect of anxiety on physical well-being. Ultimately, these findings point to potential benefits of a clinical focus on increasing life meaning and peace for cancer survivors as they transition into follow-up care.

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A CONGREGATIONAL HEALTH NEEDS ASSESSMENT TOOL AND FINDINGS

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Faith-based organizations (FBOs) are important partners in developing and implementing health promotion programs for their communities. Assessing the health needs of these communities first can identify important issues to be addressed. Therefore, tools that assess a broad spectrum of physical, mental, and social needs are needed. The Mid-South Congregational Health Survey was developed through a community collaboration and assesses needs related to physical and mental health as well as social determinants of health. Congregations served by two healthcare institutions within the greater Memphis, TN area implemented the survey between February and July 2019. Associations between needs and age, sex, race, and educational level were examined using logistic regressions while adjusting for congregation size. Congregation leaders and members ($n=617$) from 76 congregations completed the survey. The average age was 54.74 ($SD=15.83$) and most participants identified as African American (86%), female (69%), and having less than a college degree (57%). Frequently reported needs were anxiety/depression (66%), high blood pressure/stroke (65%), stress (64%), affordable healthcare (61%), and youth programs (59%). Individuals 55 years or older were more likely to report high blood pressure/stroke ($OR=1.79$, 95% CI: 1.16, 2.39) as a need, but less likely to report anxiety/depression ($OR=0.44$, 95% CI: 0.30, 0.65), stress ($OR=0.63$, 95% CI: 0.43, 0.90), and youth programs ($OR=0.59$, 95% CI: 0.41, 0.85) as needs compared to individuals under 55 years of age. African Americans were more likely to report high blood pressure/stroke ($OR=3.55$, 95% CI: 1.96, 6.42), affordable healthcare ($OR=2.91$, 95% CI: 1.62, 5.24) and youth programs ($OR=3.25$, 95% CI: 1.78, 5.93) as needs compared to Whites. Individuals with a high school education or less were less likely to report stress ($OR=0.43$, 95% CI: 0.24, 0.79) as a need compared to individuals with college degrees. Congregation members identified interconnected needs across the spectrum of health. Thus, programs that addresses physical health (i.e., high blood pressure, stroke), mental health (i.e., anxiety, depression, stress), and social determinants of health (i.e., affordable healthcare, youth programs) holistically versus individually are needed. Future efforts should test the survey with diverse populations to verify findings across a variety of FBOs and to help develop targeted programs.

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FACTORS DETERMINING PARTICIPANT PREFERENCE FOR MINDFULNESS-BASED CANCER RECOVERY VS. TAICHI/QIGONG IN ONGOING MATCH STUDY

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Purpose: Partially randomized, participant-preference trial design is often recommended for studies assessing the effectiveness of behavioral interventions where participants cannot be blinded to the intervention. In our ongoing randomized preference-based multi-site (Calgary, AB, and Toronto, ON) integrative-oncology trial, the MATCH study, which investigates the effectiveness of mindfulness-based cancer recovery (MBCR) vs. Taichi/Qigong (TCQ) and waitlist control in cancer survivors, we found more participants chose to join TCQ compared to MBCR. However, little is known about the factors that determined preference for the intervention. The current study seeks to explore participants' reasons for their preference for these two behavioral interventions.

Methods & Analysis: Participants in the ongoing MATCH study having a preference were included. Participants rated their expectations from their preferred program, and program acceptability and perceived benefits from the preferred program on a 5-point Likert scale. Furthermore, a subsample participated in open-ended, semi-structured interviews which queried expectations from the preferred program, direct or indirect experience with the intervention and personal factors influencing their preference. Interviews were tape-recorded, transcribed verbatim and analyzed using thematic analysis with mixed deductive and inductive coding.

Results: A total of 347 people have participated in the MATCH study so far at the Calgary site, with 135 preferring TCQ, 92 preferring MBCR, and 120 having no stated preference. Twenty-two people were included in the interviews. Data analysis is currently underway; participant's socio-demographic characteristics will be presented using descriptive statistics and the results of the thematic analysis will be presented as themes highlighting reasons for participants' treatment preference.

Implications: Findings from this study will inform researchers about the views and past experiences of MATCH study participants that guide their preference for these two mind-body therapies. Identification of reasons guiding participant preference may help inform patient-centered decision-making and care in the design of future behavioral trials.

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DEPRESSION SYMPTOMS AND MINDFULNESS: A NETWORK ANALYTIC APPROACH

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Network analysis is an analytical technique that allows one to look at the symptoms constitutive of a given mental disorder, and allows one observe their relationships between one another. In clinical psychology more broadly, network analysis has gained attention specifically in the realm of interventions, as it allows one to view how interventions impact symptom relationships. One intervention that network analysis has not yet been used to examine is mindfulness meditation, an intervention that has gain much attention in recent years. Using two datasets (Georgetown, N= 126; NYU, N= 92) from two randomized controlled trials on the effect of mindfulness meditation on depression and PTSD symptoms, we examined how a meditation intervention impacts the networks of these disorders. For both PTSD and Depression symptoms, those assigned to the active treatment condition had no significant changes to their networks. However, when one looks closely at the networks of the responders versus non-responders to meditation treatment for depression symptoms, one sees that the responder network at baseline is significantly less dense than the network for non-responders. Furthermore, at the endpoint of the study, the difference in density becomes even more pronounced. Ultimately, this analysis could provide valuable insight into how meditation alleviates depression symptoms. Limitations of this analysis include low N, impacting network stability, as well as differing measurements of depression across data sets. Future directions include repeating these analysis on larger meditation data sets.

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SHARED DECISION MAKING IN COMPARATIVE EFFECTIVENESS RESEARCH USING CLUSTER RANDOMIZATION: EARLY FINDINGS FROM PCORI.

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Background: Decision aids and shared decision-making (SDM) approaches help clinicians and patients work together to make decisions on treatment plans that balance the benefits and harms with patient preferences and values. Gaps in clinical evidence can make it difficult to know which decision aids and SDM methods are most effective. The Patient-Centered Outcomes Research Institute (PCORI) supported cluster randomized controlled trials (RCTs) to bridge the evidence gap and improve patient-centered health care. To inform best practices for engaging patients and providers in SDM, we examined PCORI-supported cluster RCTs to 1) Identify effective interventions and 2) Compare study characteristics of cluster RCTs that reported positive findings with those that reported null findings.

Methods: Two program staff independently read and manually abstracted information from final research reports on all cluster RCTs managed by PCORI's Comparative Effectiveness and Decision Science Program (CEDS) and completed by January 2019. Staff double-coded data on cluster-specific study characteristics such as number of arms, number of clusters per arm and average number of participants per cluster. A senior staff member reviewed and resolved discrepancies.

Results: There were 16 completed cluster RCTs, representing trials from earlier funding cycles. Of the 16, 10 focused on SDM, involving over 21,000 patients. Study populations ranged from parents of children with minor head trauma deciding whether to use computed tomography to women attending family planning clinics seeking contraceptives to patients from racial and ethnic minority groups with serious mental illness deciding which medication to use. The proportion of trials defining clusters at the clinic level was 60%; 40% defined clusters at the provider level. The proportion of cluster RCTs with more than two arms was 30%. Overall, the average number of clusters was 39 (range: 4 – 172), average number of patients per cluster was 129 (range: 4 – 430) and average population served was 2,150 (range: 92 – 9,030). The proportion reporting null findings was 40% (n=4). These trials reported clusters at the clinic level and tended to be larger in scale, reporting the highest number of patients per cluster and highest number of patients served. Reasons for null findings included failure to implement the intervention and low fidelity to the full intervention dose.

Conclusions: Monitoring can identify clinical efficiencies in cluster RCT design and conduct, an important policy and funding issue. Results from our efforts to systematically classify trial-specific metrics can strengthen the evidence base in SDM and support increased uptake of research.

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PARENT RACE AND BODY SIZE IMPACT HOW PROVIDERS GATHER INFORMATION FOR TYPE 1 DIABETES TREATMENT DECISION-MAKING FOR A CHILD

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Provider bias about race and body size has been shown to contribute to disparities in treatment decision-making and patient health outcomes in adult care; however, the impact of these biases on pediatric care is understudied. Treatment decision-making for type 1 diabetes in children is particularly prone to the influence of provider bias because of the lack of unambiguous and universal clinical guidelines. Providers are expected to tailor insulin therapy recommendations to patients' and caregivers' personal and social characteristics because while certain treatments (e.g., insulin pump therapy) may lead to better glycemic control and have a lower risk of complications, they place a greater burden on caregivers and require patients to have more technical and cognitive skills. One pathway through which provider bias may impact type 1 diabetes treatment decision-making for children is by causing providers to gather information about the patient and the caregiver that is consistent with stereotypes and biases. This biased collection of information can then lead to different treatment decisions. Using simulated patient interactions, we tested whether parent race and body size impact how providers ask questions about the patient and the parent.

A 2 (parent race: Black, White) by 2 (parent body size: obese, normal) between-subjects survey experiment was conducted with 420 US pediatric endocrinologists. Participants viewed a vignette describing a 10-year old girl with type 1 diabetes and poor glycemic control who is currently on a moderately intense insulin regimen. The vignette was illustrated with an artist's drawing of the girl and her mother in a clinic setting. Parent race and body size were manipulated so that the mother was either Black or White and either had obesity or a normal weight. The girl and mother's race was matched. After viewing the vignette, participants chose questions to ask the mother and/or patient from a predetermined list. Comparisons were controlled for provider BMI.

Providers who viewed the normal weight (vs. obese) mother drawings asked more questions ($p = .003$). Specifically, more questions about diabetes knowledge, diet and exercise, dosing, injecting, storage, and complications were asked in the normal weight (vs. obese) mother conditions ($.001 \leq p\text{-values} \leq .042$). In addition, there were race by body size interactions on the number of dosing and complications questions asked, such that providers in the normal weight (vs. obese) Black mother condition asked more questions about dosing ($M = 4.8$ vs. 3.8 , $p = .005$) and complications ($M = 1.5$ vs. 0.8 , $p = .001$), while the number of questions asked did not differ between the White mother conditions.

These findings suggest that provider perceptions about race and body size can influence how providers gather information about patients, which may contribute to variations in treatment decision-making and patient health outcomes.

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“TAKE CHARGE, GET CURED”: TESTING A MHEALTH HCV TREATMENT DECISION TOOL FOR METHADONE PATIENTS FOR ACCEPTABILITY AND EFFICACY

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Background: Hepatitis C (HCV) is a highly prevalent infection in current and former IV drug users. Current estimates indicate that over 70% of those in methadone maintenance treatment programs (MMTs) have HCV, but only 11% have initiated treatments despite availability of new treatments that are easily tolerated and can cure infection in about 8 weeks.

Methods: We conducted a pilot randomized equivalency trial at four Philadelphia, PA MMTs to test acceptability, feasibility and promise of efficacy of our “Take Charge, Get Cured” mobile health (mHealth) treatment decision tool, developed through extensive formative work that included methadone patients’ input and targeted directly to concerns of methadone patients with Hepatitis C (HCV). We compared its impact on perceptions and knowledge about HCV and HCV treatment, decisional conflict, intention to and actual initiation of HCV care to a web-based Cochrane-reviewed, non-targeted HCV decision tool. Subjects (n=122) were randomized, administered baseline questionnaires, interacted with the targeted or non-targeted decision tool on an electronic tablet, and answered post-test questions. After 3-months subjects (n=93; 76%) were surveyed for follow up.

Results: “Take Charge, Get Cured” users were more likely to report the tool helped with decision making and demonstrated greater improvement in knowledge, decisional conflict, and intention to be treated for their HCV infections than users of the non-targeted decision tool. They were significantly more likely to say the targeted tool was helpful, that they would recommend it to others, and was helpful. At three month follow up, targeted group participants were more likely to say the tool helped them make a better decision about treatment and prepared them to talk to their doctor about what matters most to them about treatment. No differences were seen in actions to initiate HCV care, but more targeted group participants reported talking to their doctors about HCV treatment.

Conclusions: Results indicate a highly targeted mHealth decision tool is an important strategy to affect perceptions and knowledge of HCV treatment that lowers decisional conflict about initiating treatment, key components in decision making. We believe this highly acceptable and feasible intervention could be utilized in clinical settings to address the important barriers to initiating HCV treatment in a vulnerable population.

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BREAST CANCER WORRY IN HIGH RISK WOMEN OFFERED PREVENTIVE THERAPY: A UK MULTICENTRE PROSPECTIVE STUDY

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Background: Worry about developing breast cancer is associated with cancer prevention behaviours, such as uptake of preventive therapy. However, the direction of this relationship has been questioned. The Cognitive-Social Health Information Processing model suggests there may be an inverted U-shaped relationship between worry and uptake, whereby moderate levels of worry are most strongly associated with uptake. Few prospective studies have been conducted to test this theory.

Aims: 1) Assess levels of breast cancer worry in women considering preventive therapy; 2) identify the socio-demographic and clinical factors of women who experience high breast cancer worry; 3) examine whether there is an inverted U-shaped relationship between worry and uptake; and 4) assess changes in worry over time.

Method: Women at increased risk of breast cancer were recruited from 20 clinics across England (n=408). Self-reported uptake of prophylactic tamoxifen was assessed three months later (n=258, 63.2%). Breast cancer worry (‘I worried about developing breast cancer’; ‘My worries about breast cancer interfered with my daily activities’) was assessed at baseline and three months using a 4-point Likert scale. In the pre-registered primary analysis, participants who reported ‘Not at all’ or ‘Rarely’ to both worry questions were classified as ‘low worry’. Participants who reported ‘Sometimes’ were classified as ‘medium worry’, and those who reported ‘Often’ were classified as ‘high worry’. Pre-registered sensitivity analysis was undertaken which increased the threshold for the classification of high worry (‘Sometimes’ or ‘Often’).

Results: In total, 39.5% of respondents reported medium worry at baseline and 21.2% reported high worry. Ethnic minority women were more likely to report high worry than white women (OR=3.02, 95% CI=1.02, 8.91, p=0.046). Women who were educated to below degree level were more likely to report high worry than those with higher education (OR=2.29, 95% CI=1.28, 4.09, p=0.005). No association was observed between worry and uptake of tamoxifen, although fewer respondents with medium worry at baseline initiated tamoxifen in the primary analysis (low worry=15.5%, medium=13.5%, high=15.7%). In the sensitivity analysis, participants presenting with medium worry (‘Rarely’) reported the highest uptake of tamoxifen (19.7%). At three months, women’s mean worry scores had significantly reduced from 4.09 out of 8 at baseline to 3.72 at follow up (p < 0.001).

Conclusion: We found weak evidence to support the ‘inverted U-shaped’ theory, although the worry-uptake relationship was affected by the categorisation of worry. Standardised reporting of the classification of worry is warranted to allow transparent comparisons across cohorts. Ethnic minority women and those with less education may need additional support to reduce cancer-related worry when considering preventive therapy.

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ILLNESS PERCEPTIONS, DEPRESSIVE SYMPTOMS, AND TYPE 1 DIABETES MANAGEMENT AMONG LATINO AND NON-LATINO WHITE EARLY ADOLESCENTS

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Illness perceptions may impact depressive symptoms and type 1 diabetes (T1D) management during early adolescence. Prior research has focused on non-Latino Whites (NLW), despite evidence that different ethnic/racial groups perceive illnesses differently. Further, assessments of illness perceptions have not considered how others are involved in illness management (e.g., perceived parental control) nor perceptions of illness-related self-conceptions (e.g., if T1D is smoothly integrated into one's self-concept). Such perceptions may be important during adolescence when parental involvement in T1D declines and teens are developing a stable sense of self-identity. We used survey methods to examine ethnic differences in illness perceptions—including T1D-related perceptions of self and others—and their associations with outcomes among Latino and NLW early adolescents. Participants aged 10-15 ($N = 118$; 54% Female; 48% Latino; $M_{age} = 13.24$) completed survey measures of illness perceptions, depressive symptoms, and adherence. HbA1c was collected from medical records. Results revealed that Latinos perceived less personal control over T1D ($t(111) = -1.995$, $p = .049$) and viewed T1D as less chronic ($t(93) = -2.540$, $p = .013$), but these perceptions were unrelated to outcomes. Interestingly, higher perceived parental control was associated with lower depressive symptoms ($\beta = -2.858$, $SE = .940$, $p = .003$), and trended toward higher adherence ($\beta = .208$, $SE = .107$, $p = .053$). Higher perceived illness integration was associated with lower (better) HbA1c ($\beta = -.409$, $SE = .142$, $p = .005$), better adherence ($\beta = .178$, $SE = .063$, $p = .006$), and lower depressive symptoms ($\beta = -2.614$, $SE = .534$, $p < .001$). Conversely, higher perceived illness severity was associated with higher (worse) HbA1c ($\beta = .511$, $SE = .182$, $p = .006$), poorer adherence ($\beta = -.263$, $SE = 0.79$, $p = .001$), and increased depressive symptoms ($\beta = 2.310$, $SE = .717$, $p = .002$). Although there were no significant differences in these associations across ethnic groups, these findings demonstrate the importance of illness perceptions in the management of depressive symptoms and T1D during early adolescence. Taken together, these results highlight the need to consider illness perceptions associated with the self, as well as others, when examining associations with health outcomes in future research.

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DIABETES-RELATED TOPICS DISCUSSED IN MEDICAL VISITS FOR ADOLESCENTS AND YOUNG ADULTS WITH TYPE 1 DIABETES

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Objective: Diabetes health care providers provide essential behavioral health information to adolescents and young adults (AYAs) with type 1 diabetes during routine diabetes care. This study utilized audio recordings of diabetes clinic visits to identify content discussed in routine diabetes care and associations among key demographic and clinical characteristics and clinical content.

Methods: 28 AYA participants (M age = 17.58 years \pm 1.06; 54% female; 43% non-Hispanic white) and 7 health care providers (HCPs) participated in a longitudinal study of health communication and had up to 4 routine diabetes clinic visits audio recorded (65 total visits recorded; M visits per participant = 2.32 visits; M duration = 21.62 minutes). Clinic visits were transcribed and coded by trained coders to categorize all content. Chi-square tests of independence were performed to examine the relation between gender and frequency of topics discussed, and between parent/guardian presence and frequency of topics discussed.

Results: Across participants, the following topics were discussed in at least one visit: Objective Indicators of T1D Health 100.0%; Adherence 100.0%; Environment (e.g. family, school, work) 96.4%; Lifestyle (e.g. diet, physical activity, sleep) 82.1%; Transition to Adult Diabetes Care 10.7%; Sexual Health 10.7%; Substance Use (e.g. alcohol, drugs, nicotine) 10.7%. A parent/guardian was present in 64.6% of visits. The relation between gender and Transition to Adult Diabetes Care was significant, $\chi^2(1, N = 65) = 4.13$, $p < .05$. Transition was more likely to be discussed in visits with female AYAs. Parent/guardian presence was significantly associated with discussions of Sexual Health and Substance Use, $\chi^2(1, N = 65) = 8.69$, $p < .01$; $\chi^2(1, N = 65) = 4.72$, $p < .05$, respectively. Sexual Health and Substance Use were both more likely to be discussed in visits without a parent/guardian.

Discussion: Results suggest that topics relevant to diabetes care such as transition to adult diabetes care, sexual health, and substance use are not routinely discussed during medical visits, particularly when a parent/guardian is present. Standard templates in electronic medical records of topics for HCPs to discuss, as well as time alone between AYAs and HCPs without a parent/guardian, may help facilitate more frequent discussion of these topics.

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IMPACT OF DINING WITH DIABETES, A COMMUNITY BASED DIABETES MANAGEMENT PROGRAM ON CONFIDENCE TO MANAGE THE DISEASE IN OLDER ADULTS

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Introduction: According to the American Diabetes Association, over 30 million Americans (about 1/10 people) have diabetes, with type 2 diabetes (T2D) being the most common form of the disease, accounting for over 90% of all cases. Research indicates that group-based diabetes self-management education can result in improvements in clinical, lifestyle, and psychosocial outcomes for persons with T2D. The present research sought to evaluate if subjective confidence to manage diabetes was reflected in objective biomarker measures of hemoglobin A1c and blood pressure readings from pre to 3-months post program in a group of older adults who completed an evidence-based diabetes self-management program.

Methods: Dining with Diabetes (DwD) is a community-based diabetes self-management program for adults with T2D or pre-diabetes. A series of 4 weekly, 2-hour classes and a follow-up class held 3 months post program were conducted based on the social cognitive theory. The program offered food demonstrations and tastings, physical activity, and group-based discussions about diabetes management. Topics included (1) common tests to know, (2) carbohydrates, sweeteners and fiber, (3) fats and sodium, and (4) medication and goal setting. Data collection occurred at the first and last DwD class (3-month follow-up). Self-reported variables included demographics and psychosocial factors (confidence to manage diabetes, diabetes knowledge, and habits related to diabetes management). Clinical outcomes were determined by Hemoglobin A1C and blood pressure.

Results: Study participants (N=21) were mostly female (90.5%), Caucasian (100%) and older adults (mean age = 75 +/- 6.1). 3-month outcomes revealed a significant increase in confidence to manage diabetes scores ($p < .05$). Clinical outcomes indicated a significant reduction in systolic blood pressure ($p < .05$). No significant differences were found in mean diastolic blood pressure or A1c levels. Post program, 90% of participants stated that the class had a positive impact on their health.

Conclusion: These pilot results suggest that the Dining with Diabetes program may contribute to an increase in confidence among older adult women to manage their Diabetes. These findings are tangentially supported by the significant reduction in systolic blood pressure at 3 months. While confidence is a strong predictor of healthy behaviors, causality cannot be inferred from these results. Should these preliminary findings be supported in additional DwD studies, such evidence could be used to inform a larger and more diverse randomized controlled trial in the future.

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FEASIBILITY OF TEXT MESSAGE SLEEP ASSESSMENT IN AFRICAN-AMERICANS AND LATINOS WITH TYPE 2 DIABETES

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Background: Since 2017, the American Diabetes Association recommends sleep assessment in people with type 2 diabetes (T2DM). However, only 43% of primary care providers ask their patients about sleep, and accurate sleep assessment is challenging. Paper-based sleep diaries are often incomplete, illegible, or subject to hoarding (multiple days completed at once). Text messaging (TM) may provide an inexpensive and convenient method for sleep assessment. This pilot study evaluated the feasibility of a TM sleep diary among a minority population with T2DM. We compared TM-derived sleep parameters with those obtained by actigraphy.

Methods: A convenience sample of 40 participants with uncontrolled T2DM from an urban, academic medical center was recruited from a concurrent randomized, controlled trial of a mhealth diabetes self-management program. Participants first completed an in-person interview assessments of sleep quality (Pittsburgh Sleep Quality Index, PSQI, with scores ≥ 5 suggestive of poor sleep). Participants then wore an Actiwatch (Philips) for seven days during both wake and sleep intervals. During those seven days, patients received scheduled TMs every day at 10:00 AM via a custom app (mytapp). Participants responded to 10 sleep assessment TMs individually, with message content adapted from the Consensus Sleep Diary. TM responses were double-coded and adjudicated by an independent researcher. Spearman rank correlations between sleep parameters from TMs and actigraphy were computed. Bland-Altman plots were created to determine agreement and bias.

Results: Of the 40 patients enrolled, 32 were female, 34 were African-American, and 6 were Latino. The mean age was 52.2 years (standard deviation [SD] 8.2), mean hemoglobin A1c was 8.98 (SD 1.5), and mean PSQI score 7.6 (SD 3.6). All 40 patients wore the Actiwatch and 39 completed TM sleep diaries. With a maximum of 70 TM replies possible, median non-response rate was 4.5 (interquartile range [IQR] 2.0-13.5). Total sleep time (TST) was similar between actigraphy and TM (median 383 vs. 393 min. respectively [$rs=.71$, $p < .01$]). Sleep onset latency (SOL) for actigraphy and TM was median 25.3 vs. 27.5 min. [$rs=.56$, $p < 0.01$]. Wake after sleep onset (WASO) was higher from actigraphy than TM (median 46.3 vs. 6.0 min. [$rs=.28$, $p=.08$]). Bias (mean of difference) estimates were: TST -18.3 (95% CI [-41.5, 5.0]), SOL -2.5 [-13.3, 8.2], and WASO 37.1 [28, 46.3].

Conclusion: TM is a novel and feasible method for sleep assessment. There was a strong correlation between TM and actigraphy in total sleep time evaluation and a moderate correlation between TM and actigraphy in sleep onset latency evaluation. The value of other sleep parameters obtained via TM remains uncertain. Accurate knowledge of sleep duration and quality, which have a known relationship with glycemic control, is important in diabetes management.

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INCREASING ENGAGEMENT AND RETENTION IN THE NATIONAL DPP LIFESTYLE CHANGE PROGRAM: A HUMAN CENTERED DESIGN APPROACH

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The National Diabetes Prevention Program lifestyle change program (LCP) is a research-based program with proven efficacy at helping people with prediabetes reduce their risk for developing type 2 diabetes. This structured program encourages moderate weight loss and other healthy lifestyle changes among participants, lowering their risk of type 2 diabetes, heart attack, and stroke. Program evaluation indicates that participant weight loss outcomes are improved by increased attendance and completion of the program, and retention is key to program recognition by the CDC and reimbursement by payers. While participant retention in the LCP is an imperative for programs it has been a challenge. This project aimed to gather insights about participant engagement in the LCP that can be applied to increase engagement and retention. It used a Human-Centered Design (HCD) approach, which is an evidence-based, data driven method for understanding people's needs and motivations in order to design effective solutions that meet those needs. Data collection methods included literature review; in-depth interviews with LCP program administrators, coaches and participants; and observations of LCP sites. Qualitative data analysis of the findings identified major themes and recommendations for supporting participant engagement. Results indicated that participants are engaged in the LCP when they connect authentically with their coach, offer and seek support from their peers, and are absorbed in the program curriculum and activities. This poster will describe the HCD approach, as well as findings related to participant engagement needs, the attributes and behaviors of engaging lifestyle change coaches, and the elements of an engaging class. Recommendations for supporting increased participant engagement in the National DPP and similar chronic disease lifestyle change programs, as well as areas for future research will be discussed.

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TRANSLATING A RIGOROUS RESEARCH INTERVENTION FOR USE IN ROUTINE CLINICAL CARE: THE PATRIOT RANDOMIZED CLINICAL TRIAL (RCT)

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Background: PATRIOT is a RCT testing if a personalized behavioral intervention (PBI) reduces foot lesions in adults with diabetes. The PBI is a comprehensive phone-based intervention that targets multiple behaviors related to foot self-care, foot self-monitoring, diet, and other diabetes-related behaviors.

Objective: To translate the PATRIOT intervention for clinical implementation based on feedback from the current PATRIOT interventionists and a clinical nurse care manager.

Methods: We examined the average time interventionists spent preparing for and delivering counseling calls in PATRIOT. We conducted semi-structured qualitative interviews with the current intervention team (n=5) on how to implement the intervention in a clinical setting. We also conducted a semi-structured interview with a VA nurse care manager to understand current clinical workflow and potential challenges to implementation. We analyzed interviews using thematic analysis to obtain understanding of how PATRIOT can be implemented in clinical care.

Results: A total of 406 individuals were randomized with 203 participants assigned to receive the PBI. The average time to prepare for counseling calls was approximately 10 minutes and average call length was 23.69 minutes (SD=12.81). Key themes that emerged from interviews around changes needed for implementation were: technology integration to optimize efficiency in clinical care, prioritizing foot self-care over foot temperature monitoring, and emphasizing patient-centeredness. All interventionists felt calls should be less scripted and more conversational to enhance personalization and give patients the ability to troubleshoot barriers and create SMART goals most pertinent to them. Interviewees also discussed foreseeable challenges for clinical implementation and two key themes emerged: retention of health behavior theories after intervention translation and competing priorities among the multidisciplinary care team. Implementation of PBI should fit into clinical workflow to ensure success.

Conclusion: Simplifying PBI increases feasibility for clinical implementation. Integrating PBI into clinical care will promote preventive health among vulnerable patients, ultimately leading to better health outcomes. Future directions to integrate the PATRIOT intervention into the clinical setting should utilize a formal process of toolkit development and evaluation of toolkit implementation along with effectiveness.

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WHEN BELONGING BACKFIRES: DISCRIMINATION PREDICTS TYPE 2 DIABETES RISK AMONG COLLEGE STUDENTS HIGH IN SOCIAL BELONGING

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Almost one-third of college students are affected by obesity, putting them at increased risk for metabolic disease. Emerging research implicates experiences of discrimination—a form of psychosocial stress—as one factor that can exacerbate metabolic disease risk. The aim of the present study was to replicate and extend earlier findings linking discrimination to increased metabolic disease. Specifically, in addition to examining the link between discrimination and metabolic disease risk, we examined whether social belonging—a known buffer against the negative health effects of psychosocial stressors—might moderate this relationship. In the link between discrimination and metabolic disease risk, social belonging might serve one of two moderating roles. Social belonging is a known buffer against the negative health effects of psychosocial stressors, suggesting that belonging should weaken the relationship between discrimination and metabolic disease risk. Alternatively, research on social exclusion suggests that people are most distressed when they experience social exclusion from groups with which they highly identify. In this way, feeling strongly that one belongs but regularly experiencing social threat in the form of discrimination should exacerbate the relationship between discrimination and metabolic disease.

Participants from a Hispanic serving institution ($N = 160$, 60.9% Hispanic/Latino/a, 63% female) completed items assessing their comparative (for their age and gender) risk for type 2 diabetes (e.g., family history, waist size, physical activity, diet). Participants also reported on the frequency with which they experienced discrimination on campus. Finally, participants rated the extent to which they felt a sense of belonging on campus. Supporting the social exclusion hypothesis, more frequent discrimination was related to higher comparative type 2 diabetes risk only among those who had high campus social belonging (+1 SD) but not among those who reported low campus social belonging (-1 SD). These findings highlight the negative metabolic health implications for students who experience social exclusion in the form of discrimination in an environment they had perceived as one of belonging.

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EXAMINING PREDICTORS OF SELF-CARE EMPOWERMENT INTERVENTION DROPOUT IN JAPANESE PATIENTS WITH TYPE 2 DIABETES

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Objective: Growing evidence reveals that culturally-tailored empowerment programs positively influence diabetes behavior changes while improving self-efficacy, diabetes self-management (e.g. diet, exercise), and treatment outcomes (e.g. BMI, hemoglobin A1c). However, little is known about the factors associated with dropouts of empowerment programs. Examining clinical, psychosocial, and socioeconomic factors related to dropouts is a necessary first step to developing an effective culturally-tailored empowerment program. We examined the predictors of self-care empowerment intervention dropout among Japanese patients with type 2 diabetes through a pre-post study.

Methods: We recruited inpatients who attended a structured diabetes education program at one university hospital in Tokyo, Japan. Inclusion criteria were as follows: (1) diagnosed with type 2 diabetes, (2) aged 20-65 years, (3) not undergoing treatment with either psychiatric or eating disorders, and (4) native Japanese speaking. The self-care empowerment intervention was a follow-up program after the hospitalization. It consisted of a total of 10 weeks, with patients watching a video composed of narrative stories in the social context to make diabetes behavior changes at home once per week. Pre- and post- intervention assessments were based on a patient self-reported questionnaire. It included the General Self-Efficacy Scale, the Rosenberg Self-Esteem Scale, Patient Activation Measure (PAM-13), hemoglobin A1c, BMI, and socioeconomic status at the point of pre-intervention. PAM-13 was used to assess patients' activation levels for self-care.

Results: Out of 22 patients, a total of 17 patients participated in the self-care empowerment intervention (participation rate; 77.3%). Eleven patients completed the whole 10-week intervention, while 6 patients had dropped out (retention rate; 64.7%). There were significantly more dropouts in newly diagnosed patients with type 2 diabetes (mean diabetes duration: 1.2 years vs. 12.1 years, $p = 0.006$). The dropouts had higher patient activation for self-care than those who completed the intervention (PAM-13: Level 3 vs. Level 2). However, other clinical and psychosocial parameters associated with dropouts had no differences in BMI ($p = 0.83$), self-esteem ($p = 0.97$) and self-efficacy ($p = 0.28$) with those who completed the intervention.

Conclusion: Special attention and additional support to the vulnerable individuals with newly diagnosed with type 2 diabetes but yet higher patient activation for self-care should be incorporated into developing and implementing a culturally-tailored self-care empowerment program.

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SEX DIFFERENCES IN EDUCATIONAL INEQUALITY IN DIABETES PREVALENCE IN THE UNITED STATES (2001-2016)

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Background: Health disparities research has long documented a robust educational gradient in morbidity and mortality and acknowledged the protective role of education in health. However, it is less clear if the magnitude of the protective effect of higher education has changed over time and whether there is a differential effect across race/ethnicity and sex. This study examined the association of education with prevalent diabetes and tested whether this association is modified by sex, race/ethnicity, and survey year.

Data and Methods: This analysis included 35,118 non-institutionalized adults aged 20 or older from the National Health and Nutrition Examination Survey (NHANES) 2001-2016. Diabetes was defined as HbA_{1c} ≥ 6.5% and/or the use of any glucose-lowering medication. Multivariable logistic regression with survey weights was used to obtain odds ratios (OR) for the association of education with prevalent diabetes. Interaction terms for education with race/ethnicity, sex and survey year were included in models.

Results: The age-adjusted prevalence of diabetes increased from 6.9% in 2001-2002 to 12.5% in 2015-2016. In 2015-2016, adults with less than high school education had a higher prevalence of diabetes (18.4%) than adults with a college education (9.6%). Additionally, the prevalence of diabetes in 2015-2016 was higher among men (13.7%) than women (11.4%) and differed by race/ethnicity (11.3%, 17.6%, 14.2%, and 12.3% in whites, blacks, Hispanic, and other, respectively). The education-diabetes association was modified by sex ($p=0.06$) but not race/ethnicity or survey year. After adjustment for sociodemographic factors, health behaviors, and health conditions, those with college education versus less than high school education had a lower diabetes prevalence, and this association was stronger among women (OR=0.57, 95% CI=0.46-0.70) than men (OR=0.73, 95% CI=0.57-0.93).

Conclusions: The inverse educational gradient with diabetes prevalence was stronger among women than men, suggesting potential differential returns in the social stratification of health.

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SOCIAL SUPPORT, DIABETES DISTRESS & SECURE ATTACHMENT IN TYPE 2 DIABETES

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Background: Type 2 diabetes (T2D) is prevalent in the US, and the difficulties of living with this illness can result in significant emotional distress. Social support may be protective for decreased distress, improved health and quality of life in T2D, but not everyone may benefit from social support in the same way. Attachment style, characterized by comfort in connectedness with others, may be an important factor influencing the effect of available social support. This study examined associations between social support and diabetes distress (DD), and evaluated moderating effects of secure attachment on this relationship.

Methods: We screened 114 adults with T2D (M(SD), age = 55.7(9), 86% white, 59% male, M(SD), HbA_{1c} = 8.5(1.6) for N=109), for potential entry into a trial of cognitive behavioral therapy for adherence and depression. Social support satisfaction and network size, total DD, as well as DD subscales for emotional burden, physician-related distress, regimen-related distress and interpersonal distress were assessed via validated questionnaires. Multivariable linear regressions tested associations between social support and DD, controlling for age, gender and depression symptom severity. Moderation analyses examining the role of secure attachment were run with the same covariates.

Results: A negative bivariate relationship was found between support satisfaction and total DD ($r = -.21$, $p = .02$), but did not remain significant in the adjusted model. Among DD domains, higher support satisfaction was bivariately associated with less interpersonal distress ($r = -.40$, $p < .001$), remaining significant in adjusted analyses ($\beta = -.38$, $p < .001$). Older age was independently associated with less DD in all adjusted models. There were no significant relationships found between network size and total DD or DD subscales. Secure attachment was not associated with DD. Contrary to our hypothesis, secure attachment was not found to be a moderator of relations between social support and DD.

Conclusions: Support satisfaction was associated with lower total DD and diabetes-related interpersonal distress. Results suggest that secure attachment may be irrelevant to the relationship between social support and DD. Future research should examine these associations in larger samples of people with diabetes. This study contributes to a relatively small body of work examining attachment in diabetes, as well as a larger literature on protective psychosocial factors for diabetes-related distress in T2D.

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ADAPTING A COOKING, FOOD BUDGETING, AND NUTRITION INTERVENTION FOR A RURAL COMMUNITY OF AMERICAN INDIANS WITH TYPE 2 DIABETES

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Introduction: Type 2 diabetes is a leading cause of morbidity and mortality among American Indians (AIs) in the United States (US). Most existing interventions in AI communities focus on diabetes prevention, but few are designed to optimize diabetes management. Although a healthy diet is a key component of managing diabetes, few interventions address underlying contextual factors that inhibit individuals' ability to eat healthy foods. The Cooking for Health Study is a randomized controlled trial designed to test the effectiveness of a culturally-tailored food budgeting, purchasing, and cooking intervention on improving diet quality and cardio-metabolic health among AI adults with diabetes who reside in a large AI community in the North-Central US. The curriculum (print and video) is adapted from Cooking Matters, an evidence-based healthy eating program utilized by SNAP-Ed and USDA My Plate. This formative project examined curriculum adaptations needed to target AI adults with diabetes in a rural and resource-limited setting.

Methods: Two focus groups of AI adults with diabetes were conducted to (1) identify necessary adaptations to Cooking Matters; and (2) inform the development of new materials that address barriers to healthy diet identified in previous pilot work, including low literacy/numeracy and food budgeting skills. Participants were recruited using flyers, social media, and by word-of-mouth. Focus groups lasted 90 minutes, and were audio-recorded and transcribed. Transcripts were coded by two analysts using a coding scheme based on the focus group guide and an inductive, constant comparison approach. Queries of codes were reviewed for themes.

Results: Participants (n=14) ages ranged from 40-59 years old; 11 (79%) were female. Identified themes revolved around curriculum content and ways to incorporate culture and family into the intervention. Participants suggested adding content on mental health to address the stress of living with diabetes. Additionally, participants provided ideas on how to include AI culture (e.g., traditional foods, language) in the curriculum. Participants were also interested in learning how to prepare child-friendly foods and involving the whole family in cooking.

Discussion: Healthy cooking interventions for AIs with diabetes should include content on traditional culture and ways to involve family in cooking, as well as mental health and well-being. Cooking Matters will need adaptations to be more relevant and effective in this AI community.

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RECRUITMENT OF MINORITY FAMILIES TO BEHAVIORAL CLINICAL TRIALS: IDENTIFYING HARD-TO-RECRUIT FAMILIES

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Minority youth with type 1 diabetes (T1D) are at risk for poor illness management and suboptimal glycemic control. Despite this, almost no clinical trials have targeted this high-risk population. In light of barriers to enrolling minority families into clinical trials, information is needed to characterize level of effort needed to effectively conduct such outreach and to understand the characteristics of families who are hardest to enroll. The study purpose was 1) to describe the level of effort needed to enroll urban African American adolescents with T1D and their parents into a clinical trial testing an ehealth intervention targeting illness management and 2) to investigate differences between families who were "hard-to-recruit" versus "easy-to-recruit" during initial recruitment and enrollment. Hard-to-recruit (HTR) was defined as those whose initial recruitment letter was returned due to an incorrect address, who had disconnected/ incorrect phone numbers or who no-showed for a scheduled recruitment visit. The study was conducted at five Midwestern pediatric diabetes clinics in Detroit and Chicago. Participants were 127 African American adolescents with T1D. Mean youth age was 13.4 years and parent age was 42.4 years. 53% of youth and 89% of parents were female. Mean youth HbA1c was 11.4%. On average, 8.8 contacts (phone calls, texts, letters) were needed to enroll families. HTR families (N=44, 35%) required almost twice as many contacts ($p < .01$). 17% of the sample required a face-to-face contact from research staff during a diabetes clinic visit to successfully enroll them. HTR families were not significantly different from ETR families on diabetes characteristics (duration of illness, insulin regimen, or HbA1c). Parent-reported family characteristics including level of disorganization in the home and diabetes-related family conflict also did not differentiate HTR from ETR families. No significant differences were found for most demographic factors (youth age, caregiver age, or caregiver education). However, HTR families had significantly lower annual family income than ETR families (\$27,700 vs \$37,600, $p < .05$). Findings demonstrate the high level of outreach efforts required by research staff to recruit urban high-risk minority families into clinical trials. The hardest to recruit families are characterized by barriers to enrollment related to poverty and may require novel approaches in order to increase their participation in research.

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DIALOGUE ANALYSIS DURING A COGNITIVE REHABILITATION INTERVENTION FOR PEOPLE WITH DIABETES: ARE WE REALLY PATIENT-CENTERED?

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Background: The importance of discourse in patient learning in health education is uncontroversial, but the positive effects of discourse in online interventions are understudied and can only be expected if the instruction meets certain quality requirements. The purpose of this project was to analyze the online classes of a cognitive rehabilitation intervention for people with type 2 diabetes to determine to what extent the classes had characteristics of productive discourse.

Methods: Ten adults with T2DM and two interventionists participated in an 8-week intervention that combined classes held via webinar with online home-based computer training. The Generalized Medical Interaction Analysis System, based in Speech Act Theory, was used to analyze the discourse. Transcripts of the classes (n=8) were coded using a coding manual, two trained coders, and atlas.ti software. The unit of analysis was a completed speech action or “utterance.” Two main codes were assigned: a speech act code (questions, representations, logistics, socializing) and a topic code. The codes were subcoded to describe the utterances further (e.g. comprehension, emotions, checking understanding).

Results: The number of statements varied between classes and percentages were calculated for the individual categories. Most interventionist statements and questions were representative (55%) (e.g. “Insomnia can cause cognitive problems”); checking for understanding (30%) (e.g. “is that clear?”); and expressing empathy (15%) (“That must have been hard”). Interventionist feedback on participant statements consisted of explanation or observation (52%); evaluation of the participant response (21%); and problem-solving (14%) (“Let’s see what else we can do”). Most feedback was short restatements of the participants’ statements and evaluations (e.g. “correct”) or comments for further reflection (e.g. “have you thought about this?”). Problem solving dialogue included questions that elicited participants’ values/preferences (48%).

Discussion: The discussions overall were characterized by a high percentage of open-ended questions, short participant responses, and interventionist feedback that was participant-centered. The pattern of interventionists’ behavior was consistent with motivating positive behavioral change. Future interventions should include components of discourse evaluation and examinations of relationships to adherence and clinical outcomes.

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EVALUATING A BEHAVIORAL COMMITMENT PROGRAM TO SUSTAIN ENGAGEMENT IN A DIGITAL DIABETES MANAGEMENT PLATFORM

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Objective: Sustaining participant engagement in digital lifestyle change programs is both crucial and difficult. A “5-day Challenges” behavior change program was implemented to an existing diabetes (DM) management platform (Livongo) with the hypothesis that an intention to change health behaviors will improve the frequency of blood glucose (BG) checks via a cellularly connected meter and associated mean BG values over three consecutive 30-day periods (“Post1”, “Post2”, “Post3”) relative to a 30-day “Pre” period.

Methods: 136,626 individuals enrolled in Livongo for at least 30 days were given the opportunity to participate. Of those, 8,258 expressed interest, and were presented with a sequence of five 5-day activities (eating vegetables, drinking water, walking more, sleeping well, and reducing stress). 3,982 completed at least one of the 25 Challenge steps (Participants), and 4,276 completed 0 Challenge steps (Initiators). All other individuals were classified as Controls. For evaluation, Initiators and Controls were matched to Participants based on key demographic traits, frequency of BG checking, and other program activity during the Pre-period using a 1-to-1 exact matching method. The Pre-period was defined as the 30 days prior to the date of the first Challenge step for Initiators and Participants, or prior to 2019-05-15 for Controls.

Results: After matching, each cohort had 3,308 individuals. At Post1 and Post3 relative to Pre, the percentage of each cohort achieving ≥ 5 checks was +10.9 points (i.e., 90.2% at Post1 vs 79.3% at Pre; McNemar’s test p -value < 0.001) and -1.3 points ($p = 0.080$) for Participants; +3.4 points and -7.1 points for Initiators (both $p < 0.001$); and -4.9 points and -12.3 points for Controls (both $p < 0.001$). Similar trends were observed for achieving ≥ 10 checks or performing any program activity, revealing initial improvement and sustained engagement over time among Participants vs. Initiators and Initiators vs. Controls. A significant decrease in mean BG from Pre to Post3 was larger among Participants (mean: -5.1 mg/dl, 95% CI: [-6.5, -3.7]) than Initiators (-4.1 mg/dl [-5.5, -2.7]); Controls saw a non-significant change (-0.7 mg/dl [-1.9, +0.6]).

Conclusions: The “5-day Challenges” mobile-based behavior change protocol significantly and positively impacted blood glucose checking frequency—a key index of program engagement—and was associated with significant reductions in mean blood glucose relative to baseline.

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DYADIC ASSOCIATIONS BETWEEN BODY MASS INDEX AND INCIDENT DIABETES IN MIDDLE AGED AND OLDER ADULTS

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Body mass index (BMI) is positively associated with the risk of developing type 2 diabetes (T2D). Although romantic partners influence each other's health outcomes, links between partner's BMI and the development of T2D have not been examined. Therefore, the purpose of this study was to test dyadic associations between BMI and the development of T2D in middle-aged and older adult couples over 8 years. Data came from both members of 950 couples in the Health and Retirement Study. Neither partner had diabetes at baseline (2006). Body mass index was based on objective measurements of height and weight at baseline. Diabetes status was assessed at baseline and two follow-ups (2010, 2014) via blood samples; individuals with hemoglobin A1c levels at or above 6.50% were classified as having diabetes. The actor-partner interdependence model for binary outcomes was used to examine dyadic associations between BMI at baseline and the development of T2D during follow-up. After adjusting for covariates (age, education, ethnicity, marriage duration, physical activity), a significant actor effect was observed, such that one's BMI at baseline was positively associated with one's own odds of developing T2D during follow-up (OR = 1.08, $p < .001$). A significant partner effect was also observed, such that the BMI of one's partner at baseline was positively associated with one's own odds of developing T2D during follow-up, above and beyond one's own baseline BMI (OR = 1.04, $p = .003$). These associations were not moderated by sex. This pattern of results held when BMI was coded categorically (not overweight/obese vs. overweight vs. obese). In conclusion, every one unit increase in partner's BMI at baseline was associated with a 4% increase in one's own odds of developing diabetes during the next 8 years, above and beyond one's own BMI at baseline. Although research largely examines *intrapersonal* risk factors for chronic health conditions, such as T2D, these results suggest that *interpersonal* risk factors are a promising avenue of research. These results also highlight an opportunity to develop theoretical models that specify how and when partner characteristics are linked to physical morbidity.

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DIET QUALITY AND WEIGHT-RELATED EXPERIENTIAL AVOIDANCE FOLLOWING TREATMENT FOR WEIGHT-LOSS AND DISINHIBITED EATING

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Obesity/Overweight is a major public health issue. Diet quality and weight-related experiential avoidance (EA) may serve as barriers to weight loss. Weight-related EA includes attempts to avoid thoughts and situations that remind one of their weight and is related to disinhibited eating. In a recent randomized controlled trial, Veterans completed 4 weeks of Acceptance and Commitment Therapy or behavioral weight-loss (BWL) treatment for disinhibited eating following participation in the VA's weight management program and were followed up for 6 months. The aims of this secondary data analysis were to examine 1) if there was improvement in diet quality from baseline to 6-month follow up; 2) relationships between demographic characteristics, weight-related EA at baseline and post-treatment, and diet quality at follow up; and 3) whether changes in weight-related EA during treatment were related to change in diet quality at follow up. Veterans (N=68; Mage=57 years; MBMI=38 kg/m²) completed food frequency questionnaires at baseline and 6-months, which were used to generate a diet quality score on the healthy eating index-15 (HEI-15). Weight-related EA was assessed using the Acceptance and Action Questionnaire for Weight-Related Difficulties Revised (AAWQR) at baseline and post-treatment. Two-way mixed ANOVAs revealed no treatment group differences on either HEI-15 or AAWQR; HEI-15 score significantly declined from baseline (M=69.8) to 6-month follow up (M=67.3; $p < .001$) and AAWQR total and subscale scores significantly improved from baseline to post-treatment ($ps < .005$). Correlation analyses revealed several significant negative correlations with HEI-15 at 6-months including AAWQR total at baseline ($r = -.26, p = .03$) and post-treatment ($r = -.25, p = .04$) and AAWQR subscales representing weight as a barrier to living ($r = -.24, p = .048$) and self-stigma ($r = -.28, p = .02$) at post-treatment. Regression analyses examined sex, baseline BMI, and post-treatment AAWQR, controlling for baseline AAWQR and HEI-15, as predictors of HEI-15 at 6 months. Male sex ($b = -5.15, p = .04$), but not post-treatment AAWQR, was associated with HEI-15 at 6 months. We found that greater weight-related EA was associated with lower diet quality cross-sectionally, but changes in EA during treatment did not predict changes in diet quality at follow up. Additional research is needed to determine how best to improve and sustain dietary behavior in behavioral interventions for obesity and disinhibited eating.

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EXAMINING ASSOCIATIONS AMONG PARENT REPORTED CHILD HEALTH BEHAVIORS AND CHILD HEALTH STATUS, AND BMI IN PRE-ADOLESCENT GIRLS

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Introduction: Improving healthy eating behaviors in children is important since child health predicts cardiovascular disease in adulthood. Previous longitudinal research shows a negative relationship between breakfast consumption and BMI, and a positive relationship between fast food consumption and BMI in pediatric populations. This study examined the association of parent report of child health and health behaviors with child BMI in ethnically diverse middle school aged girls.

Methods: 340 middle-school aged girls ($M = 11.8$ years; 91% minority) were participants in a larger study emphasizing the importance of healthy lifestyle. Participants' BMI (kg/m^2) was calculated after measuring height and weight ($M = 21.4$, $SD = 4.97$). Parental rating of child health status was determined by response to the question "How would you describe your child's health?" Approximately 46% of parents reported their child's health as "very good" or "excellent." Parents reported the average days/week that their child consumed breakfast ($M = 5.96$, $SD = 1.79$) and fast food ($M = 1.49$, $SD = 1.18$).

Results: Two regression models were conducted controlling for child age and maternal education. In model 1, predictors were child breakfast and fast food consumption and the outcome was parent reported child's health. There was a significant association between child breakfast consumption ($\beta = .143$, $p = .008$) and fast food consumption ($\beta = -.195$, $p < .001$) with parent reported child's health. In model 2, predictors were child breakfast and fast food consumption and parent reported child's health and the outcome was child BMI. There was a significant association between parent reported child's health with BMI ($\beta = -.306$, $p < .001$).

Conclusion: The findings indicate that both breakfast and fast food consumption are associated with parent reported child's health and that parent reported child's health is associated with BMI. Identifying parent-modifiable child health behaviors (like providing children with breakfast and limiting fast food consumption) that predict child BMI and overall health is important for the purpose of interventions in clinical practice. Pediatricians can educate parents on the health benefits of regular breakfast consumption and infrequent fast food consumption to ultimately improve child weight status, health, and develop sustainable health habits.

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DOES STRESS DERAIL MOTIVATION FOR HEALTHFUL EATING IN PREGNANCY AND POSTPARTUM?

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Although women report motivation for healthful eating during pregnancy, their adherence to US dietary guidelines is low. Qualitative data have shown that pregnant women may relax effortful control over eating behaviors to reduce stress during pregnancy; thus, stress may override motivation to eat healthfully. According to self-determination theory, autonomous (internal) sources of motivation are more closely related to health behaviors than controlled (external) sources of motivation, suggesting that autonomous motivation may be able to buffer the potential adverse effect of stress on diet quality. This study examined associations of diet quality with stress, autonomous motivation, and controlled motivation during pregnancy and postpartum. Participants in the Pregnancy Eating Attributes Study completed multiple 24-hour diet recalls and validated measures of perceived stress and motivation for healthful eating (analytic sample: $n = 282$ pregnancy; $n = 190$ postpartum). Hierarchical multiple regressions tested associations of diet quality (Healthy Eating Index-2015) with stress, motivation (autonomous and controlled motivation entered simultaneously), and their interactions, controlling for age, education, race/ethnicity, and income. Diet quality was not associated with stress in pregnancy or postpartum ($b = -.003$, $p = .98$ and $b = .02$, $p = .88$, respectively). Autonomous motivation for healthful eating was significantly greater during pregnancy (4.51 ± 1.14) versus postpartum (5.24 ± 1.25 , $t(184) = 2.61$, $p = .01$), but controlled motivation was unchanged. Diet quality was strongly associated with autonomous motivation during both periods ($b = 3.33$ and 3.57 , $p < .001$, respectively), but was not associated with controlled motivation ($b = -.38$, $p = .58$ and $b = .53$, $p = .57$, respectively). Interaction terms were nonsignificant and provided minimal improvement to model fit. Although negative point estimates for all interaction coefficients suggested that stress may attenuate the relationships between motivation and diet quality, all 95% confidence intervals were inclusive of zero. The elevation of autonomous motivation during pregnancy and its' association with diet quality is consistent with qualitative findings that pregnant women perceive eating healthfully as beneficial to their baby and suggests the potential utility of approaches to foster autonomous motivation.

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HOUSEHOLD FOOD WASTE REDUCTION: LESSONS LEARNED IN A FIRST-OF-ITS-KIND INTERVENTION

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Introduction: Wasted food in the home represents a multipronged problem of food management. Food waste impacts household finances and represents missed opportunities to eat healthful foods, especially because the largest proportion of consumer food waste comprises fruits and vegetables. Wasted food rotting in landfills also greatly contributes to emissions of methane, a potent climate change gas. Research suggests household food waste is largely preventable, and as such changing behaviors in ways that can reduce food losses at home could contribute to healthier eating, stabler home finances, and reduced environmental impact simultaneously. Because this area of research is relatively new, only limited literature exists exploring behavior-related issues such as motivations and barriers to reducing food waste. And, to the best of our knowledge, no published research exists detailing methods for conducting household food waste intervention studies specifically.

Methods: We recently completed a first-of-its-kind intervention focused on reducing food waste at the household level. We recruited fifty-three households, which participated in a 5-week intervention leading to significant reductions in wasted food, which were associated with changes in related theoretical behavioral constructs. Throughout the intervention, our team gathered information on what worked, what did not, and what could be improved in future studies. This abstract presents those lessons learned by offering ideas on methodology, process, and participant interaction.

Results: Successes included designing understandable methods for participants to collect food waste using bins and scales, as well as making food waste collection straightforward by offering a clear definition of what ‘counted’ as waste. However, we identified opportunities to improve training processes both in terms of efficiency and repeatability. And participant data reporting, though conducted with a simple online interface, required a change in process mid-study to ensure consistency. We also found that exploring multiple food-related values as motivations, rather than a singular approach (such as focusing solely on health) proved vital to engaging participants in reducing food waste over time. We noted, however, that it was important to capture as much contextual data as possible as family events, parties, cooking mistakes, and eating out, among other issues, played a considerable role in impacting food waste patterns.

Discussion: Lessons learned from this unique pilot study provide useful insights for others interested in developing interventions that assist individuals in food waste reduction. Offering understandable processes and methods, motivations, and clear data reporting schemes, along with the equipment necessary to repeat the process consistently, can aid in developing larger and better interventions in the future.

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DEMOGRAPHIC AND CULTURAL CORRELATES OF TRADITIONAL EATING AMONG ALASKA NATIVE MEN AND WOMEN AT RISK FOR CARDIOVASCULAR DISEASE

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Background: Traditional foods are a way to connect with and celebrate culture, transmitted across generations. In Alaska’s Norton Sound region, the traditional diet with marine sources of omega three polyunsaturated fats is thought to be protective against cardiovascular disease (CVD). Yet, the increased availability of processed foods from the lower 48 has shifted traditional eating patterns, with a concurrent rise in risk of CVD. This study seeks to understand traditional eating practices among Alaska Native men and women in Norton Sound and its relationship with cultural correlates and demographic factors.

Methods: As part of the HEALTHH project (Healing and Empowering Alaskan Lives Toward Healthy-Hearts), 299 Alaska Native men and women from the Norton Sound region of Alaska who are at-risk for CVD were recruited and surveyed at baseline. A 38-item food frequency questionnaire (FFQ) was developed to assess dietary intake for the past 7 days. The measure included nine foods defined as traditional and common to the region (e.g., wild berries, moose, salmon, seal or whale oil). Response options ranged from “Did not eat it this week” (coded 0) to “More than twice each day” (coded 14). A “traditional foods index” was computed as servings of traditional foods divided by total servings of assessed foods. The index was non-normally distributed, and thus nonparametric tests were conducted to examine associations.

Results: The median traditional foods index was 17% (IQR: 9%-30%), indicating that among the foods included in the FFQ, weekly consumption of traditional foods made up about a fifth of reported diet. A Mann-Whitney U test found significant difference ($U=9052$, $p=0.043$) between the median traditional foods index in participants completing the questionnaire in the summer months (May–September, 19.42%) compared to the winter months (October–April, 14.92%). Those in smaller communities (< 1000 residents) had a higher median traditional food index (18.65%) than those in the larger community of Nome (~3800 residents) (12.95%, $U=6022.5$, $p=0.041$). Spearman correlations were significant for tests of association between the traditional foods index and age [$r=.27$, $p<0.001$], community connectedness [$r=.19$, $p=0.002$], community standing [$r=.15$, $p=0.015$], and traditional language comprehension [$r=.199$, $p=0.001$]. Language fluency [$r=.03$, $p=0.658$] and cultural identification [$r=.07$, $p=0.234$] were not significantly correlated with the traditional foods index.

Conclusion: A greater proportion of traditional foods in one’s diet among Alaska Native men and women was found in the summer months, in smaller communities, and among older individuals. Traditional eating was positively correlated with community connectedness, community standing, and traditional language comprehension. Further research is needed to examine how these findings may influence CVD and other health outcomes.

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THE INFLUENCE OF MINDFUL EATING AND/OR INTUITIVE EATING APPROACHES ON DIETARY INTAKE: A SYSTEMATIC REVIEW

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Background: Research on restrained eating has led to the belief that an eating style that relies on physiological cues of hunger and fullness may enhance dietary outcomes as compared to an eating style that relies on cognitive control. Two types of interventions have been developed to assist with the development of an eating style that relies on cues of physiological need. These interventions focus on mindful eating (ME) and intuitive eating (IE). This systematic review examined how ME and IE interventions influence dietary intake, and how well the interventions influenced ME and IE by reporting outcomes when they were assessed with a validated tool.

Methods: The selection of literature followed the PRISMA systematic review process, in which PubMed, CINAHL and PsycINFO databases were searched. Studies were included if they met the following criteria: randomized trial design, in which one arm was an intervention with an ME or IE component and there was at least one other arm that was a control or active comparison; enrolled participants were of a healthy weight or with overweight or obesity and were at least 18 years of age; and outcomes of energy intake and/or diet quality were reported at baseline and post-intervention.

Results: A total of 14 studies, represented by 15 articles, were included, which were comprised of 9 ME interventions and 5 IE interventions. Eight studies, representing 9 articles, reported on energy intake, with six studies reporting no significant differences between groups. Twelve studies, representing 13 articles, reported on diet quality, with 7 studies reporting no significant differences between groups. Four studies measured ME and IE with a validated tool, which revealed ME or IE interventions did not consistently increase ME or IE.

Conclusion: Overall, evidence suggests that ME and IE interventions do not influence dietary intake; however, future research using validated tools to measure ME and IE is needed. Without the measurement of ME or IE, it is hard to conclude whether participants adopt the ME and IE approaches, and what effect these interventions have on dietary intake.

PROSPERO registration number: CRD42019128135

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DOES SELF-WEIGHING WITH FEEDBACK ASSIST WITH THE SELF-REGULATION OF ENERGY BALANCE BEHAVIORS?

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Background: Self-monitoring of diet, physical activity, and/or weight is an important component of weight management. Self-weighing with feedback, in which the feedback is aligned with action of self-weighing, appears to enhance weight management. However, the frequency of self-monitoring weight with feedback has yet to be examined thoroughly in experimental settings, and it is unclear what diet and/or physical activity behaviors occur following self-weighing with feedback. The purpose of this investigation was to examine the effects of frequency of self-weighing combined with feedback on dietary intake and physical activity.

Methods: This study randomly assigned 22 young adults (21.8 ± 3.1 yrs, 23.1 ± 2.3 kg/m², 81.8% female, 72.7% white), seeking to maintain their weight to one of three conditions: daily weighing with feedback, weekly weighing with feedback, or no weighing control. Participants in the daily and weekly weighing groups were provided with Bluetooth scales and instructed to weigh themselves one time per day or one time per week, respectively, for four weeks. Participants received feedback either daily (daily weighing group) or weekly (weekly weighing group) on their change in weight and a suggestion of how to increase or decrease their energy balance by 150 calories in order to maintain their current weight. Diet (24-hr recalls), physical activity (accelerometry), weight, self-esteem, mood, eating attitudes, and unhealthy weight control behaviors were measured at baseline and follow-up.

Results: Participants in the weighing groups gained significantly ($p < 0.05$) less weight (-1.4 lbs ± 3.0) than the no weighing control group (2.8 lbs ± 3.3). Weight changes were -0.4 lbs ± 1.1 for the daily weighing group, -2.4 lbs ± 4.0 for the weekly weighing group, and 2.8 lbs ± 3.3 for the no weighing group, and post-hoc comparisons showed that the weight change in the weekly weighing group was significantly ($p < 0.05$) less than the no weighing control. Analyses of covariance showed no significant differences in energy intake or physical activity, self-esteem, mood, eating attitudes, and unhealthy weight control behaviors, between groups at follow-up.

Conclusion: Results suggest that self-weighing with feedback has no harmful effects and may be useful for weight control, especially weekly weighing with feedback, among adults of a healthy weight seeking to maintain their weight.

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CHANGES IN TODDLER DIET QUALITY IN A FAMILY WELLNESS PROGRAM: A PILOT RANDOMIZED CONTROL TRIAL

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Background: Poor diet quality increases the risk of obesity, diabetes, heart disease, and some types of cancers. Diet habits begin developing in early childhood and track through life. There is a need for wellness programs to help toddlers (i.e., 12-36 months) adopt lifelong healthy eating habits.

Purpose: This study's purpose was to determine the preliminary effect of a family wellness program on fruit and vegetable (FV), snack, and sugar sweetened beverage (SSB) intake among toddlers.

Methods: Families were recruited from the community and randomly assigned to an experimental wellness program called the Families Understanding Nutrition and Physically Active Lifestyles (FUNPALs) Playgroup or a usual care program called the Healthy Toddler Parent Group (HTPG). The FUNPALs Playgroup, largely based on Social Cognitive and Family Systems Theories, aimed to improve toddler diet by helping parents create a healthy home environment. FUNPALs Playgroup behavior change strategies included facilitator modeling and experiential learning delivered within a playgroup setting. The HTPG aimed to improve toddler diet by teaching parents dietary recommendations for toddlers through facilitator instruction and group discussion within a parent group setting. Both groups received 10 weekly sessions and completed pre (T1) and post program (T2) measurements. Snacks and SSB intake were assessed with the Kids Bite Food Frequency Questionnaire (FFQ), which has been validated for preschool age children (Aguilar et al., 2014). FV intake was assessed with the Kids Bite FFQ and with skin carotenoid concentration measured by non-invasive reflection spectroscopy, which is a biomarker of dietary carotenoid rich FV. Repeated measures ANOVAs were conducted to test group differences on FV, SSB, and snack intake from T1 to T2.

Results: The sample (n=50) comprised toddlers ($M_{age} = 27$ months, 58% males) and parents ($M_{age} = 31.7$ years, 84% female), who identified as predominantly Non-Hispanic white (44%), Hispanic/Latino (38%), and/or African American (32%). There was an interaction effect on SSB intake [Wilk's Lambda = .802, $F(1, 36) = 8.87, p = .005$] indicating a greater decrease in SSB consumption from T1 to T2 among FUNPALs Playgroup toddlers compared to HTPG toddlers. There was a main effect of time on skin carotenoid levels [Wilk's Lambda = .864, $F(1, 33) = 5.206, p = .029$]. Both groups showed increased skin carotenoid concentrations from T1 to T2. Per Cohen (1988), the effects on SSB consumption (partial eta squared = .20) and skin carotenoids (partial eta squared = .14) represent large effects. No interaction or main effects on parent-report (FFQ) snack or FV consumption were found.

Conclusions: This study provides preliminary evidence that a family wellness playgroup program may have a large positive effect on toddler diet quality. Next steps are to test the FUNPALs Playgroup in a fully powered RCT.

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RELATIONSHIPS BETWEEN FOOD PREPARATION QUALITY AND SOCIO-DEMOGRAPHIC FACTORS AMONG A DIVERSE SAMPLE OF AMAZON MTURK WORKERS.

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Background: The promotion of home food preparation skills is an increasingly popular approach to public health nutrition. However, little research has examined modern cooking practices in the population and how cooking quality relates to socio-demographic variables. This limits the development and effective distribution of healthy cooking initiatives. Low-cost self-report assessment tools of cooking behavior are needed to understand cooking practices across the population. The Healthy Cooking Index (HCI) has shown promise as a method for quantifying nutrition optimizing food preparation practices, but requires further development and testing in a larger sample.

Objective: The purpose of this communication is to describe the development of a self-report questionnaire mapped to the HCI and investigate relationships between HCI practices and socio-demographic variables in a sample of Amazon MTurk workers.

Methods: The HCI consists of a series of cooking behaviors with the ability to positively or negatively impact the nutritional quality of home-prepared foods. HCI self-report questions were developed with a group of community members, trained in citizen scientist research practices. The HCI questionnaire (HCIQ2) was then combined with demographic and comprehension variables and distributed to a sample of adults via Amazon's MTurk platform. Cooking frequency and comprehension variables were assessed and summative healthy cooking scores calculated based on the HCI. Relationships between HCI score and demographic variables were examined using ANOVA and Independent Sample T-test methods.

Results: Almost all MTurk respondents (n=436) reported understanding all of the questions in the survey (98.7%) and few noted issues with the questionnaire content (1.8%). Most respondents reported cooking a meal at home within the last 2 days (90%), with the majority noting lunch or dinner as the main meal (79%). Demographically, participants were mainly from the US and India, young (18-35) (75%), educated (76% with Bachelor degree or higher) and employed full time (81%). The mean HCI score of the sample was 2.31 (-1 to 8). Factors that impact HCI score include meal type (dinner > breakfast $p=.03$) and country of respondent (US > India=.05). No other demographic variables were associated with HCI scores.

Conclusions: The HCIQ2 is a feasible self-report data collection tool for use in the general population. Resulting HCI scores are influenced by meal type prepared and country of respondent, variables that should be factored into future analysis using the HCI. A deeper understanding of HCI behaviors in the population will be useful in future research examining cooking practices relative to biological correlates of health.

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COOKING QUALITY IS ASSOCIATED WITH SUCCESSFUL WEIGHT LOSS AMONG OVERWEIGHT/OBESE PARTICIPANTS IN A WEIGHT LOSS INTERVENTION.

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Background: Home cooking is associated with favorable body weight and diet quality, yet few studies have examined modern cooking habits beyond general frequency. Not all home cooking is equally healthy, thus research examining home cooking *quality* (as opposed to only *quantity*) and health outcomes is timely and will support the development and integration of cooking components into lifestyle interventions. To measure home cooking quality we developed The Healthy Cooking Index, based on extant evidence and pilot testing.

Objective: The purpose of this communication is to examine the Healthy Cooking Index scores of participants in a worksite weight loss intervention and evaluate associations between cooking quality and weight loss success.

Methods: This analysis examined 192 overweight/obese participants in the Vibrant Lives weight loss program. Vibrant Lives consisted of 16 lessons received by mail or email over 26 weeks. Program content was based on the Diabetes Prevention Program and focused on physical activity, portion control, and reducing dietary fat. Self-reported demographic information, height and weight were collected at baseline. Height, weight, and cooking behaviors as assessed by the Healthy Cooking Index Questionnaire (HCIQ2), were collected post-intervention. HCIQ2 scores were calculated for each participant and examined relative to weight loss success using Pearson correlation coefficients and ordinary least squares linear regression, with self-reported demographic variables added as covariates.

Results: Most participants were female (89%) and White (42%) or Hispanic (40%). The majority (83%) reported cooking a main meal at home within the last 2 days. HCIQ2 scores were negatively correlated with weight change (post - pre weight in lbs) (Pearson Correlation Coefficient = -.2244; $p=.002$). The regression model showed for every 1 positive HCIQ2 point change, there is a weight change difference of -1.341 lbs ($p=.003$) suggesting healthier cooking practices may support weight loss in this population.

Conclusions: This is the first study to examine the quality of home cooking behaviors relative to weight loss success during an intervention period. This study is limited by the homogenous sample. Further research is needed to understand variability in cooking quality across the population and transmission of healthy cooking education in an intervention context.

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6:15 PM-7:30 PM

EFFECTS OF CORRECTING VACCINE MISINFORMATION: FACTORS THAT INFLUENCE VACCINE MISPERCEPTIONS

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As health misinformation continues to spread online, researchers have examined the effects of fact-checking on reducing people's misperceptions despite mixed evidence for effectiveness. In particular, the rise of vaccine misinformation online has contributed to peoples' misperceptions about specific vaccines. With vaccine hesitancy being a top public health concern, it is important to first understand what factors, such as epistemic beliefs or partisan media sources, influence misperceptions about vaccines, and whether misinformation corrections reduce these misperceptions. To address this issue, we conducted a large-scale, online experiment to test the effects of correcting vaccine misinformation (correction vs. none) among five different vaccines (Influenza, HPV, MMR, TDAP, and Zika) on vaccine misperceptions. In addition, we assessed participants' need for evidence, faith in institutions, trust in medicine, conspiracy beliefs, perceived vaccine knowledge, and frequency of partisan media use. Findings indicate that the misinformation corrections significantly reduced vaccine misperceptions related to the Influenza ($b = -.52$, $p = .04$), TDAP ($b = -.37$, $p = .05$), and Zika ($b = -.82$, $p = .006$) vaccines. These corrections did not influence misperceptions surrounding the MMR and HPV vaccines. Conspiracy beliefs were a significant predictor for misperceptions among all five vaccine types ($p < .001$). However, the use of partisan media as a health information source did not influence people's vaccine misperceptions. Our findings suggest that correcting vaccine misinformation online may reduce people's vaccine misperceptions. With vaccine misinformation still prevalent online, it is important for researchers to focus on corrections to reduce the impact it may have on vaccine misperceptions. Further, health professionals should focus on interventions to address users' conspiracy beliefs surrounding vaccines. Future research should examine the effects of other correction methods to combat vaccine misinformation online.

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EFFECT OF DIFFERENT PARTICIPANT CONTACT MODALITIES ON THE ADHERENCE TO A DIGITAL MINDFULNESS INTERVENTION

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Introduction: Digital interventions address many current barriers to mental health services such as cost-effectiveness and accessibility. Increasing evidence from studies on digital mindfulness meditations supports a dose-response effect in improving stress and mental health outcomes. While research has shown that participant contact (vs. no contact) increases treatment adherence, it is unknown whether the type of contact matters. Here, we examined data from an 8-week digital mindfulness program on work-related stress and tested whether actively engaging participants or simply reminding them to meditate improved treatment adherence.

Methods: Eligible participants (n=1,128) were randomly assigned to either a digital HeadspaceTM application (n=544) or a waitlist control (n=584) condition. Those assigned to the digital meditation intervention were asked to meditate for 10 min/day over 8 weeks. Participants in this group who had not meditated in the prior 2 weeks (n=468) were contacted by the research team. Participant contact was categorized into those who actively engaged with the research team via either a motivational interviewing style phone conversation or text message response (“engaged”) and those who received a reminder to meditate via voicemail or text message but did not actively engage with the research team (“reminded”). We used independent sample t-tests to examine whether the two different contact modalities had an effect on treatment adherence as measured by the number of completed meditation sessions in the 2 weeks following contact.

Results: Of 468 contacted participants, 182 were contacted once, 145 twice, and 141 three or more times during the 8-week intervention period. For participants who were contacted only once, there was a significant effect of contact modality on treatment adherence, such that those who were actively engaged by the research team completed more meditation sessions in the subsequent 2 weeks than those who were simply reminded ($p = .015$). However, this effect was no longer significant for participants who were contacted twice ($p = .554$) or three or more times ($p = .145$).

Discussion: Our data suggest that treatment adherence to a digital mindfulness intervention could be significantly increased if researchers engaged participants early on. Participants who have recurrent adherence problems may require different strategies for reengagement. These results inform future retention and reengagement strategies for digital interventions that allow researchers to increase the effectiveness of digital programs.

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HOW HASHTAGS #EATINGFORTWO AND #EATINGFOR2 ARE USED ON INSTAGRAM: A CONTENT ANALYSIS OF PREGNANCY POSTS

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The idea that pregnant women should be “eating for two” may contribute to overeating and subsequently excessive gestational weight gain. The majority of young women use Instagram, and pregnancy is a common topic of discussion. Social media posts may influence perceived norms for eating during pregnancy. We examined Instagram posts that included “eating for two” hashtags to understand the extent to which they may be conveying unhealthy dietary habits during pregnancy. We sampled public English-language Instagram posts about diet, physical activity, or weight gain in pregnancy that included #eatingfortwo or #eatingfor2 in fall 2018 and extracted post data from the Instagram API using Python. We reviewed the post image, text, hashtags, and the user’s profile to conduct a content analysis to identify themes of how these hashtags were used; we also coded whether the user was pregnant and whether accompanying images depicted a pregnant woman (100% double-coded; 85–99% agreement; consensus reached via discussion). Of the 201 pregnancy posts sampled, 39 were no longer accessible at the time of content analysis, resulting in an analytic sample of 162 posts. The majority (73%) of posts were posted by pregnant women, and 30% of posts included a photo of a pregnant woman. Posts fell into six themes: attempting to eat healthy/consume needed nutrients for the baby (25%), encouraging/sharing overeating or unhealthy dietary intake (9%), specifically referencing pregnancy cravings (8%), blaming the baby for unhealthy or excessive intake (2%), actively refuting the idea that “eating for two” means drastically higher calorie intake during pregnancy (1%), and posts not referencing energy intake or healthfulness of pregnancy diet (55%). Posts were posted by 130 users (92% posted 1 post) with median 559 followers (IQR: 238–1388; range: 21–1712601); 12% had 10,000+ followers. All posts were liked (median [IQR]; range: 40 [23–61]; 5–10714 likes per post) and 71% were commented on by at least one other account (median [IQR]; range: 2 [1–5]; 1–286 users per post with others commenting). Instagram posts that include #eatingfortwo or #eatingfor2 include both healthy eating intentions and promotion of eating behaviors that may contribute to excessive gestational weight gain. Future research should explore how Instagram posts influence perceived eating norms during pregnancy and how this platform could be leveraged to disseminate evidence-based public health nutrition messaging.

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INTERVENTIONS FOR PROBLEMATIC SMARTPHONE USAGE IMPROVE WELL-BEING

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Smartphones occupy more time and attention than ever before. Although the scientific study of smartphone usage is still in its early stages and contains numerous ambiguities and contradictions, a growing body of research suggests that smartphone use can be problematic. The present study experimentally examined the efficacy of an intervention package designed to help users reduce problematic usage by promoting more intentional interaction with their devices. Specifically, the impact of the intervention was measured for a variety of outcomes including subjective well-being, objectively measured smartphone usage and problematic smartphone usage. A sample of 174 participants (75.3% female, 54.6% Hispanic or Latino) aged 18 to 51 ($M=23.49$) were randomly assigned to either an active usage monitoring group (control, $n = 93$) or to concurrently implement three settings changes (treatment $n = 81$): (1) turn off most notifications, (2) move all non-tool applications from the homescreen, and (3) turn the phone to grayscale. The three-week treatment period was preceded by a three-week baseline period during which usage data was collected. Participants in both conditions monitored their usage with smartphone applications. Relative to the control condition, participants in the treatment condition reported improvements in self-reported physical health, $F(1,172)=10.44$, $p=.001$, and mental health $F(1,172)=3.99$, $p=.047$, and reduced automaticity of phone use $F(1,172)=4.173$, $p=.043$, from pre- to post-intervention. Additionally, for the treatment group, reductions in automaticity mediated reductions in smartphone addiction, anxious attachment, and distraction. Notably, neither daily minutes of phone use nor the number of times the phone was unlocked was impacted by the intervention package. It therefore appears possible to achieve a more deliberate style of smartphone usage through the implementation of simple settings changes without restricting usage and with positive implications for subjective well-being. Exploratory results from a four-week follow up also support this conclusion. Participants who implemented interventions throughout the follow up period retained treatment gains, whereas those who reverted to their normal settings did not. These findings contribute to an emerging literature that demonstrates the importance of considering not only the content and quantity of technology use, but also the manner in which it is used.

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ECOLOGICAL MOMENTARY ASSESSMENT OF AFFECTIVE RESPONSE DURING PHYSICAL ACTIVITY: DIFFERENCES BY SUBJECTIVE WELL-BEING

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Physical activity promotion remains a national priority for research and intervention. Affective response during physical activity may influence the likelihood of engaging in future activity. However, there is considerable between-variation in how individuals emotionally respond to physical activity. An individual's overall trait-like affect profile (e.g., subjective well-being) may partially explain this variation. However, prior studies on affective response during physical activity have not addressed this question. The current study utilized ecological momentary assessment (EMA) to examine within-subject differences in affective response during physical activity in naturalistic settings by subjective well-being. Participants included 114 adults ($M_{\text{baselineage}} = 40.3$, 72% females) who completed three semi-annual EMA measurement bursts that each lasted four continuous days. Participants responded to eight random EMA survey prompts a day on a smartphone; surveys assessed current activity level (i.e., physically active vs. not physically active), positive affective response (i.e. happy, cheerful, calm/relaxed), and negative affective response (i.e., tense/anxious, stressed, sad/depressed, frustrated/angry). Paper questionnaires assessed trait-like positive affect (i.e., subjective well-being using the Satisfaction With Life Scale) at the beginning of each measurement burst. Separate multi-level models examined whether burst-level subjective well-being moderated the within-subject associations between activity level and concurrent affective response, controlling for day of the week, time of day, gender, age, and activity intensity (measured by a waist-worn Actigraph GT2M accelerometer). Negative affective response during physical activity (vs. non-physical activity) was lower when individuals had greater subjective well-being ($p < 0.01$). However, subjective well-being did not moderate differences in positive affective response during physical activity (vs. non-physical activity) ($p > 0.05$). Individuals with low subjective well-being may be especially vulnerable to experiencing physical activity negatively, and therefore may not benefit from exercise interventions that seek to reduce trait-like negative affect (e.g., depression). For individuals with low subjective well-being, interventions should consider prescribing activities that maximize positive affective response in order to increase adherence and support behavior maintenance.

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EVALUATING THE IMPACT OF TIME, DEMOGRAPHIC, AND SOCIAL EFFECTS ON COMPLIANCE TO EATING EVENT-TRIGGERED EMA SURVEYS IN FAMILIES

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Background: Novel data collection methodology such as ecological momentary assessment (EMA) can be used to collect data in context and in real-time. Despite its advantages, participant noncompliance is a potential limitation to using EMA. Compliance to EMA prompts can vary among different populations, and a recent review indicates that compliance rates for youth are suboptimal. Additionally, the evaluation of compliance to EMA methodology used in family-based studies has not yet been examined. This study proposes to evaluate the impact of (i) time, (ii) demographic, and (iii) social factors on compliance to event-triggered EMA surveys in a family-based study.

Methods: The Monitoring and Modeling Family Eating Dynamics (M2FED) study installed a cyber-physical system, which incorporated wearable sensors and smartphones, for a 2-week period in multiple family homes. In each family, there were 3 or more multi-generational participants (aged 11 years and up), each of whom wore a smartwatch that automatically detected eating events occurring in the home. An event-based EMA sampling protocol was used to send brief surveys to participants' smartphones shortly after an eating event was detected. For this study, the unit of analysis was every eating event-triggered EMA survey that was sent to and received by participants' smartphones throughout the span of the study (n=591). Compliance was recorded as "1" if the survey was answered, and as "0" if the survey was not answered. Logistic regression models were used to determine whether time (time of day: morning/afternoon/evening), demographic (gender: male/female; family role: parent/child), and social factors (whether *another* participating family member *j* had answered a survey that had been received within 15 minutes of focal person *i*'s survey) affected the likelihood of a survey being answered.

Results: The data in this study come from 19 families (total of 55 participants), the majority of whom identified as Hispanic or Latino (60.0%). 591 eating event-triggered surveys were sent and received. On average, the mean participant compliance rate was $M=71.5\%$ ($SD=28.8\%$, $Min=0\%$, $Max=100\%$). An EMA survey was 2.4 times as likely to be answered if another family member had answered a survey within 15 minutes ($p=0.0037$). Time of day, gender, and family role were not significant predictors.

Conclusion: These results suggest that family members and other social relations may be leveraged to increase compliance in future EMA studies.

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EFFECTS OF GAMIFYING PHYSICAL ACTIVITY ON MOTIVATIONS TO BE PHYSICALLY ACTIVE: A CLUSTER RANDOMIZED CONTROLLED TRIAL

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In contrast to controlled motivations (i.e., extrinsic and introjected), autonomous motivations (i.e., intrinsic, integrated, and identified), are more consistently associated with regular physical activity (PA). Gamification is increasingly being leveraged as a promising strategy to promote PA, but its impact on motivation for PA remains underexplored. This study examined the effect of adding gamification elements to a theory-based PA intervention on changes in motivations among insufficiently active adults. Participants were randomized as self-selected teams of 3-8 individuals to a 12-week technology-mediated PA intervention (TECH: n=59 participants; 12 teams) or the same intervention plus a real-time PA competition and gamified challenge characterized by a storyline, levels, and points (TECH+G; n=57 participants; 12 teams). Linear mixed effects models were fitted to test baseline to 12-week and 1-year changes in motivations (Behavioral Regulation in Exercise Questionnaire-3; score range: 0[low]-4[high]). For context, both groups had similar increases in mean accelerometer-measured daily steps and minutes of moderate-to-vigorous physical activity from baseline to 1-year. At baseline, participants (M age=40.1±10.3 years; 78% female) had low-to-moderate levels of intrinsic (TECH: 1.8±0.9; TECH+G: 2.3±1.0), integrated (TECH: 1.4±0.9; TECH+G: 1.6±1.0), and identified (TECH: 2.4±0.8; TECH+G: 2.7±0.7) motivations. Both groups had significant increases ($ps < 0.05$) from baseline to 12 weeks in intrinsic (TECH: 0.2±0.7; TECH+G: 0.2±0.5), integrated (TECH: 0.3±0.7; TECH+G: 0.5±1.0), and identified (TECH: 0.3±0.9; TECH+G: 0.2±0.8) motivations, with no between group differences ($ps > 0.05$). Relative to baseline, integrated motivation was significantly higher at 1 year (TECH: 0.2±0.7; TECH+G: 0.4±0.8, $ps < 0.05$), with no between group differences ($p > 0.05$). A significantly greater increase in introjected motivation was observed for TECH vs. TECH+G from baseline (1.7±1.0 vs. 1.9±1.0) to 1 year (2.2±1.1 vs. 1.9±1.0), $p < 0.01$. Adding gamification elements to a technology-delivered PA intervention among teams of adults with existing social ties improved autonomous motivations in the short-term, albeit not to a greater extent than the same intervention without gamified elements. Notably, gamification did not prompt increases in controlled motivations for PA. Testing the effect of specific gamification elements that may best enhance autonomous motivations for PA is warranted.

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A VIRTUAL GENETIC COUNSELOR FOR BREAST CANCER GENETIC RISK COMMUNICATION

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Introduction: Effective genetic risk communication has been increasingly important for disease prevention and behavior change. Yet understanding and acting on genetic risks can be challenging due to the complexity of the information, especially for individuals with limited health literacy or numeracy. Many individuals do not have access to genetic counselors due to various logistical barriers. We developed a computer animated virtual genetic counselor for hereditary breast cancer, and conducted a pilot study to assess its feasibility and acceptability.

Methods: We conducted a quasi-experimental study with 12 female participants, aged 21-63 years; 41.7% white, 25% Hispanic, 16.7% black, & 16.7% Asian; and 16.7% with limited health literacy (based on the Newest Vital Sign). Participants were asked to interact with the virtual counselor in a single 30-minute session. Measurements included post-test satisfaction and intent to follow the recommended guidelines for breast cancer screening (single item 7-point scales), and pre-post breast cancer genetics knowledge (range 1-11).

Results: Participants' post-treatment scores for the composite knowledge scale (mean=9.8, SD=0.9) significantly increased compared with their pre-treatment scores (mean=4.9, SD=2.2), paired $t(11) = -7.01$, $p < .001$. Participants were satisfied with the virtual counselor (mean=6.2, SD=0.6), and the counseling experience (mean=6, SD=0.7). They liked the virtual counselor (mean=5.6, SD=0.9), trusted her (mean=6.1, SD=1.0), were willing to continue working with her (mean=5.5, SD=1.1), and found her knowledgeable (mean=6.4, SD=0.5). One-sample Wilcoxon signed rank tests demonstrated that all single item median scores were significantly greater than neutral scores of 4 ($p < .01$ for all scales).

When asked how much information they received during the session, participants' ratings (mean=4.1, SD=0.8) indicated it was just right: neither too much nor too little (based on one sample Wilcoxon tests, $p < .01$). Participants were willing to follow the recommended guidelines for breast cancer screening (mean=6, SD=0.9), and willing to talk more about genetic risks with their doctor (mean=6.5, SD=0.7). These scores were also significantly greater than neutral scores of 4 ($p < .01$ for all scales).

Conclusion: Our results show that the virtual genetic counselor is well accepted, and is effective in educating participants about breast cancer genetics. Future research will focus on dynamically tailoring dialogue to participants' personal traits and comprehension assessed during the interaction.

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CITATION AWARD WINNER

B201

6:15 PM-7:30 PM

FEASIBILITY OF USING 'SMARTER' METHODOLOGY TO UNDERSTAND PRECIPITATING CONDITIONS FOR PEDIATRIC MIGRAINE EPISODES

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Background: and Aims: Migraine is a common neurological disease often beginning in childhood for which recurring episodes of often debilitating headaches are thought to be potentially triggered by certain stimuli. Identifying the conditions that suggest an episode of migraine may be forthcoming is a requisite step toward developing next generation "just in time" behavioral treatments with the capacity to prevent migraine attacks. Toward this end, in this study we aimed to first evaluate the feasibility in children of a methodology (Sensor-based Mobile Assessment and Real-Time Ecological Reporting) that may have potential for identifying precipitating conditions for migraine occurrence.

Method: In a sample of 30 consenting youth ages 10-17 with migraine recruited through a headache clinic, smartphones supplemented with a wrist-worn biosensor were used to collect contextual data over a period of 4 weeks. Self-reported data were collected in 4 epochs per day using custom real-time reporting software and included information on headache (e.g., time of onset, intensity), lifestyle (e.g., perceived level of physical activity and stress), and environment (e.g., perception of light and noise level). Data derived from the wearable biosensor included information on autonomic arousal and physical activity, and built-in sensors on participants' phones were used to indicate location and to quantify the sensory environment (e.g., ambient noise and light levels). Participant acceptability via an end-of-study survey, and implementation fidelity of the SMARTER methodology, were assessed to evaluate feasibility.

Results: Complete self-report data were obtained on a mean of 88% of days ($SD = 22.4\%$) and at a mean of 77% of moments ($SD = 24.5\%$). Data from the wearable biosensor were obtained for a mean of 18.7 hours per day worn ($SD = 2.3$ hours), with participants on average wearing the sensor on 21 days ($SD = 9.9$). Objective data on sensory environment (ambient light and sound) and other environmental conditions (temperature, precipitation, and air pressure) derived from built-in phone sensors could only be obtained from 17-73% of participants' own phones. Most participants (64-100%) responded with at least "somewhat agree" to questions about acceptability of the study methods, but 18-23% indicated difficulties with burden and remembering to wear the sensor. All but one participant (97%) endorsed interest in being able to receive a notification about when a migraine might occur.

Conclusions: A contemporary data sampling approach comprising ambulatory sensors and real-time reporting appears to be acceptable to most youth with migraine and may enable novel methods of predicting and preventing symptom occurrence in the future. However, use of built-in sensors on children's own phones for passive data collection appears to be unlikely to produce adequately reliable data for building predictive models.

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B202

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USING A USER-CENTERED CLINICAL DESIGN SUPPORT TOOL TO REDUCE HIGH COST MEDICATION UTILIZATION

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Background: Per capita spending on prescription drugs is the highest in the United States amongst all other countries. As value-based programs continue to shape the evolution of healthcare systems, new payment models that reward cost reductions in medication spending are emerging. Clinicians are key drivers in prescribing high-cost medications and may be unknowingly prescribing generic formulations that are more expensive than their brand alternatives. The electronic health record (EHR) can be leveraged to point clinicians to more cost-effective options. Previous studies indicate medication cost transparency EHR alerts can reduce prescriptions for high-cost medications, but little evidence shows which alerts are the most effective. User-centered design is an approach that can be employed to impact the effectiveness of such clinical decision support system.

Objective: The purpose of this study was to determine if a user-centered clinical decision support tool delivered at time of prescription led clinicians to reduce their utilization of high-cost medications.

Materials and Methods: The tool was deployed to ambulatory practices, including primary and specialty care clinics, across a single health system from October 2017 through January 2018. Utilizing principles of user-centered design, tool development incorporated considerations of provider motivations around prescribing behavior and analysis of current workflows. Four high cost medications classes were selected for the alert based on similarities to available lower cost alternatives. The tool featured a modification in the standard provider and system-level medication preference list, removing high-cost agents and substituting them with lower cost alternatives, and an alert that suggested lower cost alternatives when a medication among 4 high cost medication classes were ordered.

Results: Three of the four medication classes showed a reduction in utilization post intervention. As expected, acceptance rates of lower cost alternatives were higher when a direct match of dose and frequency existed. There was no significant difference in acceptance rates between primary care providers and specialists.

Conclusion: Findings suggest that clinical decision support can be effectively leveraged for reducing prescription of high cost medications and provide a framework for future implementation. Further research is needed to understand the gaps in disparate claims data.

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MULTIMORBIDITY AND USE OF MHEALTH TO TRACK PROGRESS ON HEALTH GOALS: RESULTS FROM THE HEALTH INFORMATION NATIONAL TRENDS SURVEY

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Background: Many U.S. adults, especially those ≥ 50 years old, have at least one chronic medical condition. Using mhealth technologies such as smartphone apps to set and track goals (e.g., losing weight, quitting smoking) may help people manage these conditions. However, prior research suggests that some mhealth users with a chronic condition track health or behaviors without tracking progress on health goals, which theoretically grounded mhealth intervention research suggests could have negative implications for health and behavioral outcomes (e.g., blood glucose management, increased physical activity). Since multimorbidity is increasing with aging of the population and people with multiple conditions may especially benefit from goal setting, additional research is needed to examine how use of mhealth to track health goals varies by number of conditions. Therefore, the aim of this study is to describe use of mhealth to track health goals in a nationally representative sample of U.S. adults ≥ 50 years old with at least one chronic condition by comparing those with one vs. two or more conditions, while controlling for age.

Methods: We analyzed combined data from the 2017 and 2018 National Cancer Institute Health Information National Trends Survey (N=6,789). We created a self-reported morbidity count (1, 2+) for diabetes, hypertension, cardiovascular disease, lung disease, and cancer (excluding non-melanoma skin cancer). Respondents ≥ 50 years old with at least one condition that reported use of smartphones, tablets, and/or other devices (e.g., Fitbits, glucometers) to track health or behaviors (n=291) were categorized into two groups: (1) “goal trackers” (n=149) use apps to track progress on health goals and (2) “non-goal trackers” (n=142) do not use apps to track progress on health goals. Age in years was measured as a continuous variable (M=56.69, SD=16.45, Range=18-101). We used weighted logistic regression to analyze associations between number of conditions and use of mhealth to track health goals, controlling for age.

Results: U.S. adults ≥ 50 years old report having one (34.17%) or two or more (61.82%) of the five chronic conditions. Goal trackers (56.25%) make up more than half of adults ≥ 50 years old with at least one chronic condition. Compared to adults ≥ 50 years old with one condition, those with two or more conditions have more than two times the odds of being non-goal trackers than goal trackers, controlling for age (OR=2.44, 95% CI=1.08, 5.53, p=.032).

Conclusion: Findings revealed that multimorbidity is associated with not using mhealth to track progress on health goals among adults ≥ 50 years old who use mhealth to track health or behaviors. Future studies could consider gathering the perspectives of older age mhealth users, particularly those with multiple conditions, to identify ways to facilitate and increase use of mhealth technologies to track progress on health goals.

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USABILITY AND ACCEPTABILITY OF A REAL-TIME MOBILE INTERVENTION TO REDUCE SEDENTARY BEHAVIOR BEFORE AND AFTER CANCER SURGERY

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Background: Sedentary behavior (SB) is common after cancer surgery and may negatively affect recovery and quality of life, but postoperative symptoms (e.g., pain) can be a significant barrier to patients achieving recommended physical activity levels. We conducted a single-arm pilot trial evaluating the usability and acceptability of a real-time mobile intervention that detects prolonged sedentary behavior in the perioperative period and delivers prompts to walk that are tailored to daily self-reported symptom burden.

Methods: Patients (N = 15; M = 49.3 years old, range 25-65; 71% female) scheduled for abdominal cancer surgery consented to the study, which involved using a Fitbit smartwatch with a companion smartphone app across the perioperative period (from a minimum of 2 weeks before surgery [M=26 days preop] through 30 days post-discharge; M=66 total days using the intervention, M = 10 day in-patient stay). Participants received prompts to walk after any SB that exceeded a prespecified threshold, which varied from day to day based on patient-reported symptom severity. Participants also completed weekly semi-structured interviews to collect information on usability, acceptability, and experience using the app, and smartphone and smartwatch logs were examined to assess participant study compliance.

Results: Of eligible patients approached, 79% agreed to participate. Attrition was low (n = 1, 7%) and due to poor health and prolonged hospitalization. Participants rated (0-100) the smartphone and smartwatch apps as very easy (M = 93.7 and 94.1, respectively) and pleasant to use (M = 94.1 and 93.8, respectively). Overall satisfaction with the whole system was 90.6, and the mean System Usability Scale score was 83.8. Overall compliance with symptom reporting was 53%, decreasing significantly from before surgery (73% of all days) to inpatient recovery (32%) and post-discharge (41%). Overall Fitbit compliance was 76% but also declined from before surgery (96%) to inpatient (60%) and post-discharge (63%). Post-discharge Fitbit compliance was significantly lower among the seven patients who were readmitted (44%) than in the seven patients not readmitted (80%).

Conclusions: Perioperative cancer patients were willing to use a smartwatch- and smartphone-based real-time intervention to reduce SB, and they rated the apps as very easy and pleasant to use. Compliance with the intervention declined significantly after surgery, especially among patients who were readmitted. The effects of the intervention on postoperative activity patterns, recovery, and quality of life will be evaluated in an ongoing randomized trial.

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HOW KROGER'S OPT-UP(R) NUTRITION SCORING TOOL TAKES A BIG BITE OUT OF IMPROVING GROCERY CHOICES

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Introduction: Eating “healthy” has become a dynamically complex challenge. Customers desire autonomy, but also seek purchasing guidance with the inundation of conflicting information available. Kroger's proprietary nutrition scoring tool, Opt-Up, has revolutionized grocery shopping behavior by objectively rating foods on a scale of 0-100 by factoring nutrient density. These categories can be further broken down into green, yellow, and red food categories. Green indicates an Opt-Up score between 71 – 100; yellow 36 – 70; red 1– 35. To generate this singular food score, positive points are given for protein, fruits, nuts, vegetables, and fiber. Negative points are distributed for saturated fat, sugars, sodium, and Calories. Customers can continuously improve their basket and overall score (recommended is 600 on a scale of 0-1000). Most importantly, shoppers have access to Nutrition Information, “Better For You” purchases, and various personalized dietary tags (i.e. Paleo, vegan, Gluten-Free, Keto-Friendly, etc). In turn, Kroger can utilize these data to personalize needs in order to increase customer loyalty, assortment quality and price satisfaction.

Methods: All User participants (n = 19,824) were stratified into three groups: Heavy Users (n = 3,752) (1+ average visits/week), High Health (n = 4,575) (high value on health), and Low Health (n = 3,595) (lower value on health). A control group was implemented that did not utilize the app. Data was analyzed using a 14-week utilization period.

Results: On average, all groups improved their Opt-Up Score better than the control. More specifically, all users increased their score by 13 points with 31% of those households seeing an increase in their score by 30 points, compared to only 26% in the control group. The highest increase was seen in the Heavy Users (22 points compared to the control) and the highest score was in the High Health Group (665 compared to 648 in control). In general, households were shown to increase their purchase of green and yellow products, including produce, while decreasing their purchase of red products (p < 0.05).

Discussion: Utilizing Kroger's Opt-Up nutrition scoring tool has demonstrated to effectively improve customer purchasing behavior towards more nutrient-dense foods. Customers are also shifting away from foods that are lacking in beneficial nutrients. Users are empowered to make their own choices, track their progress simply, and gain insightful knowledge by making cost-effective feasible changes to their diet choices. Perhaps the Opt-Up tool provides people with a greater internal locus of control and therefore can determine their own outcomes of health and desire to purchase nutrient-dense foods. Furthermore, Opt-Up facilitates progress by providing intrinsic motivation to achieve greater health and/or provide for the family and extrinsic motivation to achieve a higher overall score.

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RESPONSE PATTERNS AND PRELIMINARY EFFECTS OF A CARE-GIVER TEXT MESSAGE INTERVENTION TARGETING SUGARY BEVERAGES IN RURAL SCHOOLS

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Relative to national estimates, adolescents in rural Southwest Virginia region are consuming four times more sugar-sweetened beverages (SSB). Kids SIPsmarter is a middle school-based intervention addressing this major public health issue. As part of a multilevel approach, caregivers are engaged through a 6-month interactive text messaging program, that parallels their child's school-based curriculum. While using text message strategies to reach and engage caregivers are promising, understanding response parameters can provide insight to further improve user engagement. Therefore, the objective of this study was to use year one results from two middle schools to explore the response patterns and preliminary effects of the intervention. Caregivers received educational and personalized strategy messages twice a week and assessment messages that measured daily SSB frequency among the caregiver and child every five weeks. The text messaging software used responses to categorize SSB consumer types (i.e., parent/child, consumer/non-consumer), provide feedback, and allow for an SSB reduction strategy selection. The five assessment points were used to examine response rates, impact of reminders, time to response, changes in SSB intake patterns and frequency, and changes in strategy selection. Of 264 eligible caregivers, 94 (36%) enrolled in the intervention. Average response rate was 84%. Of the responders, 59% replied on the first attempt. Subsequent reminders increased responses by 13%, 9%, and 7% respectively. Around 94% of responses were received within 24 hours. At baseline, 60% of caregivers fell into both (caregiver and child) SSB consumers category and 13% were both non-consumers. By the final assessment, both consumers dropped to 32% and both non-consumers increased to 42%. From baseline to final assessment, frequency of SSB per day significantly decreased among caregivers (-0.3, SE=0.06)($p < 0.001$) and children (-0.2, SE=0.05)($p < 0.001$). Of the available strategy options, "tasty alternatives" was the top selected, followed by "breaking the habit", and "home/shopping tips". This study helps understand how rural caregivers respond to periodic assessment messages and provides guidance for future cohorts. Approximating the time to response and the impact of reminders has helped optimize the use and timing of text based assessments and reminders. Future research should examine a combination of both subjective and objective criteria to obtain better insight into text message engagement in rural communities.

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TAILORED IVR & SMS INTERVENTION TO SUPPORT MEDICATION ADHERENCE. A FEASIBILITY RANDOMISED CONTROLLED TRIAL.

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Objectives: The aim of this trial was to assess the feasibility and potential efficacy of the Medication Adherence for Patient Support (MAPS) intervention to improve treatment adherence in patients with hypertension, or comorbidities of hypertension, type 2 diabetes and/or cholesterol, compared to usual care.

Setting: UK primary care setting (5.7% uptake to invitation).

Participants: Patients presumed to be non-adherent to prescribed medications were eligible for inclusion. In total 140 patients (46% female, 64.3% between 50-79 years old) were randomly allocated to intervention (n=84) or control group (n=56), of whom 133 completed the intervention and 119 completed the study follow up measurements.

Intervention: MAPS was a highly tailored interactive voice response and text messaging intervention delivered to patients' phones for a duration of three months, after a baseline consultation with a health care facilitator.

Primary and secondary outcome: The primary outcome was change at three months follow up in blinded practice records of repeat prescription and unblinded patient report of days of adherence. Secondary outcome included changes in systolic blood pressure, glucose levels, and quality of life at three months follow up. We also examined treatment fidelity and engagement.

Results: medication adherence was significantly improved at the intervention group compared to the control group ($t=2.27$, $p=0.025$). Systolic blood pressure was 0.56 mmHg (95%CI -7.423 to 6.301) and HbA1c was 4.5 mmol/mol (95%CI -13.099 to 4.710) lower at the intervention group compared to the control group. Intervention drop out was 2.5%; whereas treatment fidelity was 97% and treatment engagement 47%.

Conclusions: MAPS is a low-burden and potentially very low-cost addition to usual care that can increase access to advice and support treatment adherence with fidelity of message receipt; and shows promise as a nonpharmacologic treatment option for primary care programs. Future research is needed to evaluate the intervention effectiveness and cost-effectiveness.

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CHANGING DRIVER BEHAVIOR DURING FLOODS: TESTING A NOVEL E-HEALTH INTERVENTION USING IMPLEMENTATION IMAGERY

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Objective: Drowning is the third leading cause of injury-related death. Activities such as driving through floodwater are commonly reported behaviors that precede drowning. In Australia, more than half of flood-related drowning deaths are the result of driving through floodwaters. Drawing upon our previous research, the current pre-registered study aimed to develop and evaluate a theory-based behavioral intervention employing a novel implementation imagery technique to promote safer intentions and beliefs regarding driving through floodwaters.

Methods: The study adopted a randomized controlled trial design. Participants were Australian residents holding a driver's license ($N = 460$) and quotas were used to recruit a sample with similar demographic characteristics to proportions of flood-related transport deaths in the Australian population. The study was registered on the ANZCTR clinical trials registry prior to data collection (ACTRN12618001212246). A rigorous lab-based pilot process involving qualitative interviews was undertaken prior to the trial. The control (publicly available information about the risks of driving through floodwater) and intervention (control stimuli + implementation imagery exercises) condition stimuli were delivered online using videos. Measures were taken pre-intervention, immediately post-intervention, and at a one-month follow-up. Data were analyzed using mixed design ANOVAs and Johnson-Neyman moderation analyses using the Process Macro.

Results: The intervention reduced intentions and subjective norms regarding driving through floodwater, and improved action planning regarding avoiding driving through floodwater. The control condition also improved on intentions and subjective norms post-intervention, but effects were only retained at the follow-up for the intervention group. Further analyses indicated that the intervention showed effects on post-intervention perceived behavioral control, perceived severity, anticipated regret, and barrier self-efficacy in individuals who had a modest level of intention or willingness to drive through floodwater at baseline.

Conclusions: The implementation imagery intervention is a promising approach for creating changes, at least in the short term, in some psychological constructs that are associated with driving through floodwater. Further research is needed to evaluate this intervention in "real-world" settings and to examine effects on actual behavior among drivers with at least some level of intention to drive through floodwater.

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EXTENDING SYSTEMS THINKING TO TOOLS: AN EVALUATION FRAMEWORK SUPPORTING DIABETES AND HEART DISEASE PREVENTION AND MANAGEMENT

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Background: Systems thinking is a concept that acknowledges public health approaches as dynamic and interconnected, governed by feedback, actions, and reactions of stakeholders. Despite its promise, a major challenge remains in operationalizing the concept of systems thinking into tools critical for implementation and evaluation. This work aims to illustrate the value of systems thinking in the development of a multilevel evaluation tool. This tool was developed for a statewide approach targeting diabetes and heart disease prevention and management in underserved counties in South Carolina.

Methods: South Carolina adopted a developmental evaluation framework to support systems thinking and improve the state's efforts with implementing and evaluating two complex and complementary five-year cooperative agreements. To demonstrate a systems thinking approach, an evaluation tool was created to acknowledge the contribution of state-, partner-, and health system-level roles in the implementation of chronic disease prevention and management activities. South Carolina hypothesizes that this systems thinking evaluation tool will enhance their ability to demonstrate results based on the stage of implementation and support sustainability of program activities.

Results: Systems thinking was applied to develop an evaluation tool with questions addressing approach, efficiency, effectiveness, sustainability, and impact of program activities. Indicators were developed to capture barriers, facilitators, and interdependent activities at various levels that address medication therapy management, lifestyle change programs, and adoption of electronic health record modifications to support evidence-based quality measurement. Data from this tool will be used to evaluate progress and monitor continuous quality improvement opportunities.

Conclusion: Addressing the complex nature of chronic disease prevention and management requires a systems thinking approach. This evaluation tool realistically demonstrates how to apply systems thinking in public health practice. Future steps include creating a conceptual model that captures and maps key interrelationships that influence health outcomes. This conceptual model may be used to effectively communicate how systems thinking is being applied to increase partner engagement and buy-in, therefore aiding in the elimination of siloed thinking and supporting sustainability.

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INTEGRATING WEIGHT GAIN PREVENTION WITHIN PRIMARY CARE: A QUALITATIVE EVALUATION OF THE IMPLEMENTATION OF BALANCE/EQUILIBRIO

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Background: For patients with obesity struggling to lose weight, clinical guidelines recommend halting further weight gain, yet implementation of such interventions is lacking within primary care. To address this gap, we tested a bilingual weight gain prevention intervention, Balance/Equilibrio, using a randomized controlled effectiveness trial within Piedmont Health Services (PHS), a network of Federally Qualified Health Centers (FQHCs) in central North Carolina. Obtaining perspectives of diverse healthcare professionals can provide nuanced insight the implementation of such a trial and its pragmatic design.

Objective: The current qualitative study explores the barriers of and facilitators to the implementation of Balance from the perspectives of health system staff.

Methods: Participant recruitment was conducted through purposive sampling of health system employees from a variety of backgrounds. Two researchers conducted in-person/phone semi-structured qualitative interviews (n=18), which were digitally-recorded and professionally-transcribed verbatim. Interviews were double-coded for emergent themes by two independent researchers using NVivo 12 and reviewed by a third researcher; discrepancies in coding were discussed until consensus was reached. Responses were compared within and across participants to determine emergent themes.

Results: Mean participant age was 36.9 (± 9.7) years. The majority identified as female (89%) and non-Latino white (66%); 39% provided direct medical care to patients; and 44% had been PHS employees for ≥7 years.

Respondents discussed myriad challenges in implementing a digital obesity treatment within an overburdened FQHC system. Several providers spoke of treating patients with complex comorbidities during short outpatient appointments, interfering with patient referral to Balance. Staff turnover also reduced awareness of Balance; 33% of respondents knew little about the trial.

Despite these challenges, support for Balance was a common theme among the majority of respondents. Many described key trial strengths as the bilingual Spanish format and its pragmatic, adaptable research design. Several respondents felt that interventions like Balance could provide a reimbursable approach to manage weight-related conditions when considering Medicaid transformation into value-based care. Respondents praised Balance as a successful research collaboration that served the community by integrating within the healthcare system.

Conclusion: This qualitative study demonstrated that a pragmatic weight gain prevention treatment within FQHCs was well-received by health system leaders, although staff turnover created a barrier to awareness among some. Researchers considering obesity treatment interventions within community-based settings may want to consider a sustainable and integrated approach that is mission-driven.

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USING A COMMUNITY-BASED PARTICIPATORY APPROACH TO IMPROVING FOOD AND PHYSICAL ACTIVITY ACCESS IN RURAL WV

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The Be Wild, Be Wonderful, Be Healthy project is a five-year CDC funded project that aims to increase access to physical activity and healthy eating in rural West Virginia. The two counties chosen by the CDC have high rates of adult obesity (>40%) and low access to healthy food. The project is grounded in a community-based participatory approach, with university Extension agents as the key players in each county to help the research team build relationships with key informants and community members. The primary interventions focus on policy, systems, or environmental changes identified by community members and funded through contracts of approximately \$5,000. In year one, the research team conducted in-person meetings in each county along with 20 key informant interviews and a focus group. Then, 18 projects were funded to initiate changes in communities. Participants in the interviews and focus group included community members involved with food banks, senior centers, family nutrition programs, the Extension service, faith-based organizations, schools, and local government. Data from these interviews, the contract applications, and a community partner tracking form were analyzed to provide a summary of reach and effectiveness in year one for this study. Qualitative analysis of key informant interviews followed an interpretive phenomenological approach (Smith, Jarman, Osborn, 1999). Higher order themes identified during interview coding included community assets, opportunities, and barriers. Respondents highlighted people, places, and organizations as key assets in promoting physical activity and healthy eating. The primary barriers for physical activity were related to access or safety (e.g., few locations, lack of transportation, unsuitable built or natural environment). The barriers to healthy eating that respondents identified included limited access to fresh and affordable fruits and vegetables. The range of funded projects included efforts to build new trails, improve existing trails, and increase access to youth sports in the communities. For healthy food, partners focused on increased access or quality at food pantries, a senior center, low income housing and for backpack programs at schools. US Census and WV Department of Education data were used to generate denominators for population reach estimates for the implemented projects in each county. Based on these data, the combined intervention is estimated to have reached 9300 residents, or 34% of the total population. Additional components of the intervention that have yet to be evaluated include social media communications (@BeHealthyWV). Year 2 efforts will focus on expanding reach and sustaining successful projects by providing additional funding and linking partners together to form functional coalitions.

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IMPLEMENTATION PROCESSES OF THE HEALTHY EATING HEALTHY AGING PROGRAM IN COMMUNITY-BASED ORGANIZATIONS

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Background: Heart disease is the second leading cause of death among older Asian Americans and Pacific Islanders (AAPIs). A community-academic partnership implemented an evidence-based heart health intervention focused on promoting healthy eating and healthy aging through community-based organizations (CBOs) serving older AAPIs. CBOs are critical settings for community health education. However, there is inadequate research examining how evidence-based intervention (EBI) are implemented in CBOs. This project examined processes that facilitated implementation of Healthy Eating Healthy Aging (HEHA) among CBOs serving older AAPIs.

Methods: We recruited 13 CBOs that implemented the HEHA program, where all the respondents were CEOs or senior managers. HEHA was delivered across nine U.S. states in seven Asian languages via ethno-linguistic-specific community health education for older AAPIs (n=3001). We developed a semi-structured interview guide using the Consolidated Framework for Implementation Research (CFIR) to capture how HEHA played into the five domains of CFIR: intervention characteristics, outer setting, inner setting, characteristics of the individuals, and process. We coded the transcripts and identified emerging constructs under the CFIR domains.

Results: Participants' mean age (standard deviation) was 56.67 (15.95) years; all of them identified as AAPIs. More than half were female (58%) and most had a graduate school degree (83%). Four CFIR domains emerged from the interviews: intervention characteristics, outer setting, inner setting, and implementation process. Under intervention characteristics, two constructs emerged as facilitating implementation of the HEHA program: 1) the CBOs' beliefs in the strength of HEHA to promote healthy eating, and 2) HEHA's adaptability to different AAPI subgroups. Under outer setting, CBOs described the communities' needs for healthy eating programs and that the HEHA program met those needs. Three constructs emerged under inner setting: 1) the CBOs' structural characteristics and social standing in the community, 2) the CBOs' culture, and 3) the CBOs' perception of HEHA program content as being manageable. Finally, under implementation process, the CBOs provided an evaluation of HEHA and suggested future improvements.

Conclusion: Through the interviews, we were able to identify constructs within the domains of CFIR that facilitated implementation of HEHA. CBOs are key settings for community health education, particularly among immigrant populations. Understanding processes that lead to successful implementation of EBIs in CBOs are critical for accelerating the dissemination and implementation of best practices.

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CONTACT-BASED EDUCATION IS AS EFFECTIVE AS A DIDACTIC LECTURE IN REDUCING OPIOID USE DISORDER RELATED STIGMA IN MEDICAL STUDENTS

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Introduction: The opioid crisis has created challenges for the medical community, including an increased patient load with substance use disorders and concerns regarding physician burnout. Current recommendations to address chronic pain and opioid-related stigma in the medical curriculum point to contact-based education as a promising tool to tackle these issues. Contact-based education has effectively been used to reduce mental illness-related stigma, and research is needed to investigate the application of this educational method in the context of substance abuse. To assess the effectiveness of contact-based education in changing medical students' future professional plans and stigmatic opioid-related attitudes, we implemented two curricular interventions (a contact-based panel and a didactic lecture) at an osteopathic medical school.

Methods: Medical students were randomized to a curricular intervention and completed pre- and post-surveys to measure opioid-related stigma and professional plans. One group of participants attended a lecture on opioids and medication assisted treatment (MAT) developed by a clinical psychiatrist; a second group interacted with a 5-member panel of experts in the opioid-field. Both interventions lasted 60-minutes. We conducted Fisher's exact tests, paired t-tests, and repeated-measures ANOVA to examine changes in pre-post scores.

Results: A total of 109 students participated in the study (age=24.2±2.6 years, 64.2% female, 79.8% white, 56.0% second-year students). The number of participants differed per group due to drop-out: lecture=52, contact-based=57. Baseline responses were similar across groups. Following the session, participants in both interventions rated drug abuse (mean increase=21.1%, t(108)=7.08, p<0.001) and diversion (mean increase=7.6%, t(108)=2.90, p=0.005) as significantly more problematic. Importantly, participants from both interventions expressed increased confidence in caring for patients with opioid use disorder (percent increase=45.6%, p<0.001), and increased interest in pursuing MAT training (percent increase=21.5%, p=0.042). Both curricular interventions were equally effective at reducing opioid-related stigma. The lecture and panel resulted in an average 3.6-point (t(51)=4.01, p<0.001) and 3.4-point (t(56)=3.89, p<0.001) decrease on the stigma scale, respectively.

Conclusion: Exposure to opioid-specific education with a focus on MAT, either through contact-based education or a didactic lecture, improves medical students' opioid-related attitudes and reduces opioid use disorder stigma. This is an encouraging finding as it opens up possibilities for medical programs to address stigma using multiple educational methods depending on the program's resources and current curricular design.

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HEALTHCARE PROVIDER TRAINING ON LGBTQIA+ HEALTH: AN INTRODUCTORY MODULE

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Background: Stigmatization and discrimination associated within the LGBTQIA+ community result in a cascade of health inequities. The Institute of Medicine and Healthy People 2020 highlight reduction of barriers to care related to associated stigma and lack of training for health care providers (HCP) to address the unique health issues in LGBTQIA+ persons.

Purpose: This project aimed to promote cultural competence among nursing students through development of a learning module on best practices in LGBTQIA+ health.

Methods: An exploratory qualitative design utilized focus group methodology to obtain a variety of views from stakeholders. Convenience sample was recruited from the school of nursing and LGBTQIA+ collaborative partnerships to obtain qualitative data from both populations. Focus groups were comprised of nursing students and faculty, members of the LGBTQIA+ community and HCPs who care for LGBTQIA+ individuals. Groups were conducted at the University School of Nursing. Snowball sampling was utilized to recruit nursing students and faculty; purposive sampling recruited providers who care for LGBTQIA+ individuals and participants from University Affinity Groups: Queer Professionals, Student Rainbow Alliance, Pride Health. Participants provided feedback on learning module after development.

Evaluation Plan: Focus groups captured qualitative data; a note taker and panopto recording technology were utilized to record content of focus group discussion. Transcription of each group was verified by faculty for inter-rater reliability of content. Qualitative analysis identified themes from each of the Focus Groups through consensus agreement amongst PI and CIs. Themes were identified across groups and utilized to drive content of the learning module.

Results: Major themes identified across focus groups included: *appropriate terminology, health disparities in LGBTQIA+ individuals, respectful communication about gender identity and sexual orientation*. Themes regarding learning module delivery platform included an emphasis on *interactive strategies and use of testimonials from LGBTQIA+ individuals*. An introductory learning module was developed using interactive strategies based on thematic analysis with assistance from the University Teaching and Learning Center staff. A case was constructed for students to practice learned concepts.

Implications: This innovative strategy utilized content themes driven by nursing students and faculty, LGBTQIA+ individuals and HCP who care for them to inform a learning module that supports culturally competent and gender-affirming care with LGBTQIA+ individuals. The module is currently being piloted with nursing students to assess changes in knowledge and attitudes with consideration for development of a simulation platform to apply learned concepts in a variety of health care settings.

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RESEARCH MINISTRY AMBASSADORS TRAINING: COMMUNITY HEALTH SURVEY DATA COLLECTION AND NEW ROLE AS COMMUNITY PATIENT ADVOCATES

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Faith-based communities often support and serve vulnerable and minority populations who experience the poorest health outcomes and adverse impact of health disparities shown by local and national health statistics. One characteristic of urban faith-based communities is centralized accessibility to health-related information and resources that are much needed to improve health outcomes. Pastors4PCOR (P4P), a grassroots faith-based community entity located in Chicago, developed a Research Ministry Ambassador (RMA) program to build the capacity of lay members from faith-based communities to become "research ready" for engagement and collaboration in health-related initiatives with academic health researchers. A values-based initiative, RMAs were educated about equitable partnership, trustworthy and respectful research behaviors and to serve as patient advocates. The P4P research education program introduced faith-based community representatives to patient-centered research, providing tools to navigate and interpret health-related research projects through design, development and implementation, reporting and dissemination of research. P4P-trained and IRB certified RMAs administered a 10-item community health survey (in Illinois and Arkansas) to assess faith-based community perceptions of prevalent health conditions and factors including demographic information. Between 2016-2018, RMAs collected surveys (N=1056) from African-American (98%) residents living in Illinois (Chicago) and Arkansas (Little Rock) representing 25 faith-based community churches. RMAs used survey results to inform leadership discussion and planning to maximize resources in addressing community health concerns. In this session, RMAs share first-hand experience based on their participation and real-life application of skills and knowledge gained. Highlights of their experience includes: RMAs becoming a PCORI Patient Ambassador; joining PPRNs; involvement in P4P RMA group network; presenting at community and academic forums; and opportunities for additional health condition specific training. In sum, building capacity of faith community members to engage meaningfully with research promotes equitable engagement with researchers and brings the "voice" of lay communities to the decision-making table of faith-based leaders, patient-centered researchers and agencies.

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PARTICIPANT PSYCHOSOCIAL RESPONSE AFTER RECEIVING CLINICALLY ACTIONABLE GENOMIC INFORMATION FROM A BI-BANK

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Background: Several healthcare systems, including Geisinger through their MyCode Community Health Initiative (MyCode), now conduct population-based genomic screening and report actionable results to patients. It is unknown whether patient experience in this context differs from that of indication-based genetic testing and counseling. MyCode participants receive their result from the Genomic Screening and Counseling Program (GSC). The GSC notifies the participant of the result, notifies the primary care provider, gives information about disease risk and recommended management, encourages sharing results with relatives, and offers a visit with genetic counselors.

Methods: Participants in this analysis were 63 individuals who received genetic information from the GSC (N=55) or their family members who underwent cascade testing (N=8). Transcripts from semi-structured qualitative interviews conducted 6 months or more after receiving the result or after cascade testing were analyzed using a two-part coding process to identify psychosocial reactions across interviews, followed by thematic coding within this domain. A priori codes were derived from the literature and interview guides and de novo codes developed after reviewing transcripts. Inter-rater reliability was reached between two coders for each theme.

Results: Participants reported positive, negative, neutral, and conflicting (more than one emotion) responses to receiving genetic information in this context; often noting a change over time. Initial negative responses consisted of fear, guilt, and concern about future health. Concerns for specific gene-related risks and procedures needed, anxiety about communicating to family, and worry about insurance and cost were also reported. Positive responses included feeling “grateful” and that the result was useful for medical care and prevention. Neutral reactions, like not being surprised at the result due to family history, were also reported. Many participants stated receiving the information was “not a big deal” or they were “just not worried,” noting confidence in medical professionals or not experiencing any symptoms. Many participants also noted the result was no different from information they receive from other medical screening.

Conclusion: Overall, MyCode participants appear to have integrated results from genomic screening and noted the importance of the information for medical care and prevention; with any initial negative reactions based on immediate medical impact rather than regret about receiving the information. These results indicate psychosocial response in this context may not be overly negative, that participants adjust to genomic information over time, and that this information is no different from other medical information.

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6:15 PM-7:30 PM

ILLNESS RISK PERCEPTIONS AND HEALTH PROTECTIVE BEHAVIORS PRIOR TO GENETIC SEQUENCING

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Background: Health protective behaviors (HPB) are believed to be driven by risk perceptions. However, personal experience with disease (affected vs. unaffected) and beliefs about genetic etiology may impact HPB in negative or positive ways. We explored the impact of risk perception, personal experience, and beliefs about genetic etiology on HPB among a sample of participants enrolled in the Electronic Medical Records and Genomics study at Northwestern.

Methods: Eligible participants (1) saw a Northwestern Medicine physician; (2) were ≥ 18 years; (3) could speak and read English or Spanish; and (4) agreed to have genetic sequencing with results placed in their electronic health record. Participants completed a baseline survey that asked about demographics, risk perception based on the Brief Illness Perception Questionnaire (BIPQ), personal experience with disease, and perceived causes of disease. A hierarchical multiple regression was conducted in SPSS to determine if the addition of personal experience and beliefs about genetic etiology improved the prediction of HPB beyond risk perception alone.

Results: A total of 604 participants completed the survey. The average age was 56, the majority were female ($n = 381$; 63.1%), white ($n = 506$; 83.8%), and non-Hispanic ($n = 575$; 95.2%), and unaffected ($n = 402$; 66.5%). The hierarchical regression model of gender, age, race/ethnicity, education, BIPQ score, personal experience, and belief in a genetic etiology was statistically significant, $R^2 = .152$, $F(7, 413) = 10.587$, $p < .0005$, adj. $R^2 = .138$. The addition of BIPQ score led to a significant increase in the prediction of HPB R^2 of .018, $F(1, 415) = 8.626$, $p = .003$ (Model 2), as did personal experience, $R^2 = .012$, $F(1, 414) = 5.938$, $p = .015$ (Model 3). Belief in a genetic etiology did not significantly increase the prediction of HPB.

Conclusions: Risk perception predicted HPB, but not as expected; those who viewed a disease as more threatening were less likely to engage in HPB. We found support to consider personal experience when examining the relationship between risk perception and HPB. Those affected were less likely to engage in HPB perhaps due to reduce efficacy beliefs, however, additional investigation is needed. Results suggest those who are most concerned and affected by disease may need additional support to promote informed decision making and uptake of HPB. These findings will be examined longitudinally, after the return of genetic test results.

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GENETIC DIAGNOSIS VIA POPULATION GENOMIC SCREENING PROVIDES VALUABLE INFORMATION TO ADULTS WITH NEUROPSYCHIATRIC DISORDERS

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Neuropsychiatric disorders (NPD), such as autism, intellectual disability, epilepsy, schizophrenia, and bipolar disorder, share underlying genomic etiologies and can present with marked intrafamilial variability. Pathogenic chromosomal copy number variants (CNVs) are frequently identified in children with NPD and are often subsequently found in relatives with varying NPD. However, clinical genetic testing is rarely offered to adults with NPD, despite medically-relevant care implications. Through Geisinger's MyCode Community Health Initiative, genetic counselors (GC) disclosed clinically-confirmed pathogenic CNVs identified by population-based exome sequencing to 141 adults with NPD documented in the medical record. Participant responses were initially assessed with an exploratory approach, using thematic analysis by dual coders of audio-recorded disclosure session transcripts (n=14) and post-session GC written notes (n=38). Identified themes informed the development of a post-session GC checklist for subsequent structured data collection. Key themes translated to the checklist include: overall reaction to results, statements of personal utility, disclosure of additional undocumented NPD, previous causal attributions for NPD, and clinical follow-up. Checklist data are available for 59 participants. Generally, reactions were either positive (n=42, 72%) or neutral (n=14, 24%). Statements of personal utility were made by most participants (n=50, 85%), including that the genetic information was valuable (n=45, 76%), helped "make sense" of personal (n=41, 69%) or family (n=21, 36%) NPD history, relieved guilt (n=14, 24%), and validated personal experiences (n=6, 10%). Forty-four individuals (75%) shared undocumented NPD history, including significant family history (n=32, 54%), learning disabilities (n=15, 25%), social problems (n=8, 14%), and psychiatric illness (n=4, 7%). Attributing NPD to social or environmental causes, such as parental divorce or moving in childhood, was common (n=29, 49%). Clinical follow-up was indicated for 26 (44%), including GC support to current medical providers (n=12, 20%) and referral to another medical provider (n=11, 19%) or mental health services (n=7, 12%). These results indicate that receiving a genetic etiology has a positive impact for adults with NPD. Additional research is ongoing to further explore clinical utility, intrafamilial communications and beliefs, and healthcare system infrastructure needs to more broadly support disclosure of NPD results from population genomic screening.

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EXPLORING HEALTHCARE EMPLOYEES' PERCEPTIONS OF HEALTH LITERACY TO INCREASE HEALTH LITERACY AMONG UNDERSERVED POPULATIONS

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Background: Improving poor health outcomes require removing barriers to health literacy. Providing health literacy training to healthcare employees caring for individuals with limited health literacy can aid in health literacy promotion. This qualitative study explored healthcare providers' and staff's perceptions of health literacy, health literacy skills of their patients, barriers health literacy patients encounter, and strategies to increase health literacy among underserved populations.

Methods: Focus groups were held at federally qualified health centers in Rhode Island. All 37 participants provided informed consent and completed a demographic survey. A trained moderator using a semi-structured interview guide led the groups. All transcripts were audio-recorded, transcribed, and coded; codes were reviewed to identify emergent themes.

Results: Focus group participants included doctors, nurses, and staff. Each focus group lasted approximately one hour. Results indicated that staff/providers were concerned about patients' health literacy and use of unreliable health information sources and ability to determine if sources were valid/reliable. All participants felt it important to address patients' limited health literacy and have procedures to assess their social determinants of health. Various teaching methods to address health literacy, including drawing pictures, having family members attend appointments, educational programs, and teach-back methods were emphasized.

Conclusion: This study is an important first step toward exploring health literacy perceptions among staff/providers and patients, and identifying factors that promote and impede health literacy in healthcare settings. Larger, more robust studies should explore the links between social determinants of health literacy, poor health care access, and poor health outcomes.

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THE ASSOCIATION BETWEEN FAMILY HEALTH HISTORY AND COMMUNAL COPING IN FAMILIES OF DIFFERENT RACIAL BACK- GROUND

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Type 2 diabetes is a complex disease resulted from the joint effect of genetic, socio-environmental and lifestyle risk factors that are clustered in families. Response to shared familial risk of diabetes is a family process, where individuals communicate about risk and establish routines to facilitate one another's health habits and compliance with therapeutics. This process is likely affected by one's perception of risk based on his/her knowledge about family health history (FHH). Capitalizing on network data collected from multi-informant families of different racial backgrounds in the greater Cincinnati area (28 white and 17 black/African American households; 127 participants), we investigate how the density of diabetes diagnosis in one's FHH affects communication about shared risk for type 2 diabetes and encouragement to maintain or adopt a healthy lifestyle (exercising regularly, eating a healthy diet and maintaining a healthy weight). Results suggest a higher concentration of diabetes diagnosis in one's FH is associated with a higher number of risk communication ties in all families. There is a racial difference in the effect of FHH density on encouragement ties. Specifically, more diabetes diagnosis in FHH are associated with an increased number of encouragement ties in families of black/African heritage, whereas in white families there is no such association, due to the fact that encouragement ties are saturated in these families. The findings highlight the need and promise of using FHH to motivate co-encouragement to maintain/adopt a healthier lifestyle in families of black/African heritage.

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MEDIATION ANALYSES: APPLICATION OF THE THEORY OF PLANNED BEHAVIOR CONSTRUCTS ON SUGAR-SWEETENED BEVERAGE CONSUMPTION

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We sought to determine whether any obtained effects of three interventions, based on the Theory of Planned Behavior (TPB), on sugar sweetened beverage (SSB) consumption would be mediated by corresponding effects of the interventions on the three primary TPB cognitions (i.e., attitudes, subjective norms, perceived behavioral control [PBC]). Undergraduates (N = 430) were randomly assigned to condition in a 2 (SSB risks information vs control) x 2 (SSB consumption norms information vs no information) x 2 (SSB reduction planning task vs control) factorial design. Immediately following the interventions, participants' SSB reduction attitudes, subjective norms, and PBC were assessed. SSB consumption intentions and behavior were assessed at an unannounced 2-week follow-up. In any instance where one of the three interventions (i.e., risks, norms, planning task) affected both the dependent variable (i.e., intentions or behavior) and one of the proposed mediators (i.e., attitudes, subjective norms, or PBC) a mediation analysis was conducted using Hayes' bootstrapping (with 5000 resamples) procedure. The results indicated that each of the three interventions produced significantly greater intentions to reduce SSB consumption than did its respective control condition ($p < .03$), and the condition that included all three interventions resulted in the greatest SSB reduction intentions ($p = .04$). Moreover, the effect of the social norms information intervention on SSB reduction intentions was mediated by its effects on all three of the TPB cognitions (for attitudes towards SSB reduction, for subjective norms, and for PBC), whereas the effect of the planning task on participants' intentions was mediated by its effects on their attitudes towards SSB reduction, and their perceived subjective norms. There was no evidence that the greater SSB reduction intentions produced by the SSB risks intervention was mediated by any of the TPB cognitions. Also, although the planning task resulted in lower reported SSB consumption ($p < .05$), there was no evidence that this effect was mediated by corresponding changes in any of the TPB cognitions. The literature would benefit from more efforts to experimentally manipulate all three primary TPB cognitions in a variety of health contexts. It is also important that such efforts attempt to examine the mechanisms through which the interventions produce beneficial effects on intentions and behavior.

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HUMOR CAN MAKE YOUNG PEOPLE LISTEN TO EMBARRASSING MESSAGES: TRUTH® TAKES ON SMOKING-RELATED REPRODUCTIVE HEALTH ISSUES

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Never an organization to shy away from sensitive subjects related to tobacco use, truth has taken on a subject that receives little attention in the public health community: smoking-related erectile dysfunction and menstrual cycle disturbance. Among young people, these problems are typically considered to be the plague of the lifelong smoker and are not something they believe they have to think about.

At the forefront of this issue, in 2019 truth launched a set of advertisements intended to communicate the uncomfortable but critical health message: smoking can cause damage to people's reproductive systems—even in young people. These advertisements were aimed at youth and young adults aged 15 to 24, and reveal that cigarette smoking can bring on unwanted, yet preventable, reproductive issues in an approachable and surprising way.

"Twinkle Twinkle" tackled the message that smoking can cause erectile dysfunction, even in men as young as 20. In the pre-market testing of this advertisement, researchers found that, among the intended audience of young people aged 18 to 24, 89% of the sample agreed that the intended message of "smoking is harmful" was clearly communicated. More than three-quarters of the sample (78%) agreed that it captured their attention, and a majority agreed that the ad was believable (67%) and relevant for their generation (69%).

The campaign also launched "Unflow," a message that humorously communicated the disruptive effects of smoking on menstrual periods. In pre-market testing, researchers found that, among the intended audience of young people aged 15 to 24, 82% of the sample agreed that the intended message of "smoking is harmful" was clearly communicated. A majority of the sample (70%) agreed that the message captured their attention, and like "Twinkle Twinkle," most agreed that it was believable (69%) and relevant for their generation (71%).

While a menstruation message may not directly appeal to males, and an erectile dysfunction message may not directly appeal to females, the overall messages resonated with both genders. The success of the campaign during in-market testing further indicates that truth's willingness to push the envelope and discuss reproductive health is a sound strategy to reach young people.

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BELIEFS ABOUT CANNABIS USE DURING PREGNANCY IN A HISPANIC-MAJORITY REGION OF CALIFORNIA

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Cannabis use during pregnancy has increased within the past decade, with higher prevalence among lower SES and ethnic minority populations. As more states legalize cannabis, use during pregnancy is expected to rise. Pregnant women commonly report using cannabis to treat nausea, pain, and depression, yet research suggests that cannabis use increases risk of pregnancy complications, low birth weight, and admissions of infants into intensive care units. Understanding common beliefs about safety and health risks of cannabis use during pregnancy is critically important when developing health communications and guidelines aimed at ensuring informed choices of cannabis use during pregnancy. Further, identifying groups with higher prevalence of misperceptions can inform efforts to target health communication campaigns. This survey examined differences between genders, ethnicity groups, and cannabis users versus nonusers in their beliefs about the benefits of cannabis use during pregnancy in reducing nausea, depression, pain, and discomfort and its risks of lowered intelligence, brain damage, and behavioral problems for the child. Community members in the San Joaquin Valley, a Hispanic-majority region of California, who were attending local events completed the survey. Participants ($N = 201$) were on average 40.3 ($Mdn = 38.0$) years old, female (72.9%), Hispanic (63.9%), married (51.3%), had at least 1 child (72.6%), and reported using cannabis in the past 6 months (15.4%). Analyses revealed that more males (18.5%) than females (11.7%) agreed that cannabis use during pregnancy reduces nausea ($p = .016$); fewer Hispanic participants (12.9%) than non-Hispanic participants (15.7%) endorsed this belief ($p = .040$); and more participants who had used cannabis in the past 6 months (38.7%) than those who did not (10.7%) endorsed this belief ($p = .003$). More younger men agreed that cannabis use during pregnancy reduces nausea compared with all other age and gender groups ($p = .003$). Compared with participants who had not used cannabis within the past 6 months, those who had reported higher agreement that cannabis use during pregnancy reduces depression and pain as well as higher disagreement that cannabis use during pregnancy lowers the child's IQ and increases the risks of brain damage and behavioral problems (p 's $< .01$). These findings suggest important targets for health communications targeting misperceptions about cannabis use during pregnancy, and particularly the importance of targeting individuals who have used cannabis recently.

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COLLEGE STUDENT FOOD INSECURITY AND ATTITUDES TOWARDS CAMPUS

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Background: College students living with food insecurity have an increased risk of poor sleep quality, disordered eating behaviors, psychological distress, lower GPA, and poor diet quality (El Zein et al., 2019; Hattangadi et al., 2019; Lee et al., 2018; Weaver et al., 2019). Past work has shown that food insecure students tend to have low opinions of their institutions due to inadequate accessibility of food (Ilieva et al., 2019) and financial support (Mesa et al., 2019). However, it is unclear whether attitudes differ between students living with low vs high levels of food insecurity. Less favorable attitudes could be indicative of feelings of marginalization, which in turn may increase students' risk of food insecurity (Woodford & Kulick, 2014) in part due to reduced uptake of programs and services designed to decrease food insecurity.

Methods: Undergraduate students (n=1355) from a public university completed the 2019 American College Health Association's National College Health Assessment II. Questions on campus attitudes ("students' health and well-being is a priority at my college/university" and "the campus climate encourages free and open discussion about health and well-being") on a 5-point scale (1=strongly agree; 5=strongly disagree) and food insecurity ("didn't have money to get more food" and "couldn't afford balanced meals") in the last 30 days (1=often true; 2=sometimes true; 3=never true). For both attitudes and food insecurity, responses were combined to form a single index.

Results: After adjusting for gender, transfer status, BMI, race and ethnicity, and financial hardship, logistic regressions showed that campus attitudes significantly predicted food insecurity, Wald = 17.4, $p < .001$. Students with less favorable views were 1.77 times more likely to be food insecure. All covariates were significant.

Conclusions: Campus attitudes were significantly associated with food insecurity. The causal direction of the relationship is unknown, however, it is likely bidirectional and possibly synergistic. That is, as attitudes become more negative, connectedness to the campus decreases, which in turn diminishes the efficacy of assistance programs and activities to impact food insecurity. Future research is needed to increase our understanding of the potentially complex relationship among campus attitudes, connectedness, and food insecurity on college campuses.

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DEPRESSIVE SYMPTOMS MODERATE THE EFFECT OF INTERNALIZED TRANSPHOBIA ON BINGE DRINKING IN TRANSGENDER AND GENDER DIVERSE ADULTS

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Binge drinking (i.e., consumption of ≥ 5 standard alcoholic drinks on one occasion) is an important public health concern in the U.S., as it is strongly associated with alcohol-related injuries and increased risk for onset of alcohol use disorders. Despite consistent evidence for alcohol-related disparities among transgender and gender diverse individuals (TGD; i.e., people who have a gender identity that differs from the sex assigned to them at birth, who do not identify with gender binary constructs [man or woman], or who are expansive or fluid in their gender identities), there is a dearth of research on binge drinking in this population. Moreover, extant work examining TGD alcohol use is largely epidemiological in nature, revealing little about mechanisms that may drive problematic drinking in this population. It is possible that depressive symptoms may play a role, given both the greater incidence of depression among TGD individuals and the robust link between depression and high-risk drinking in the general population. Although internalized transphobia (i.e., internalization of society's negative regard for TGD identity and expression) is a risk factor for both substance use and depression among TGD individuals, no study to date has examined how gender-minority specific psychological distress may interact with depressive symptoms to compound high-risk drinking in this population. This cross-sectional study examined depressive symptoms as a moderator of the relation between internalized transphobia and frequency of past 30-day binge drinking. Fifty-six TGD adults (69.6% female sex assigned at birth; 69.6% White; 50.0% between 25-34 years old) completed self-report measures of depressive symptoms, internalized transphobia, and frequency of past 30-day binge drinking. Internalized transphobia was positively associated with frequency of past 30-day binge drinking ($\beta = .53$, $p < .001$). Depressive symptoms interacted with internalized transphobia to predict frequency of past 30-day binge drinking ($\beta = .01$, $p = .01$), such that the predictive power of internalized transphobia on frequency of past 30-day binge drinking grew proportionately stronger as depressive symptoms increased. These results suggest that internalized transphobia may only confer risk for binge drinking among TGD individuals experiencing depressive symptoms. In clinical practice with TGD adults, integrating psychosocial and structural interventions into standard alcohol-related treatments may be warranted.

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SOCIAL SUPPORT AS A PROTECTIVE FACTOR AGAINST DAILY DYSREGULATED EATING AMONG SEXUAL MINORITY WOMEN WITH OVERWEIGHT AND OBESITY

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Background: Obesity and dysregulated eating behaviors (i.e., overeating, binge eating) disproportionately affect sexual minority women. Recent research suggests that experiencing stigma based on sexual orientation and weight (i.e., minority stress) may heighten risk for dysregulated eating among sexual minority women, yet little work has examined factors that protect against dysregulated eating in this group. Social support reduces risk for dysregulated eating in the general population and mitigates the negative effects of stigma among sexual minority adults. This secondary analysis assessed the potential protective effects of social support among sexual minority women of higher body weight by testing: (1) whether social support predicted less overeating and binge eating in daily life in this group and (2) whether social support buffered the effects of weight stigma events on daily overeating and binge eating.

Methods: Participants in this ecological momentary assessment (EMA) study were 55 sexual minority women (62% bisexual; 55% white; mean age = 25 ± 9; mean body mass index [BMI] = 32 ± 5). General social support was assessed at baseline (Social Support Behaviors Scale; Vaux, Riedel, & Stewart, 1987). For the following five days, participants used a smartphone to report weight stigma and eating behaviors five times daily at random intervals. Generalized linear models were conducted adjusting for age, race, education, BMI, baseline disordered eating symptoms, and EMA assessment completion rate.

Results: Sexual minority women with greater social support at baseline reported 32% fewer overeating episodes ($b = -0.02$, $SE = 0.01$, $p < .05$) and 61% fewer binge-eating episodes ($b = -0.03$, $SE = 0.01$, $p < .05$) during the EMA period compared to women endorsing lower social support. Even among women who experienced weight stigma during the EMA period, women with high social support reported 58% fewer overeating episodes ($b = -1.33$, $SE = 0.41$, $p < .05$) and 89% fewer binge eating episodes ($b = -2.89$, $SE = 1.11$, $p < .05$) compared to women with low social support.

Conclusion: Social support may benefit sexual minority women of higher body weight by reducing risk for dysregulated eating and buffering against the negative effects of weight stigma. Future research should investigate whether social support interventions improve sexual minority women's outcomes in treatments for obesity and dysregulated eating.

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MERITORIOUS AWARD WINNER

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USING COMMUNITY BASED PARTICIPATORY RESEARCH TO DEVELOP A WALKING PROGRAM FOR AMERICAN INDIAN AND ALASKA NATIVE OLDER ADULTS

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Background: American Indian and Alaska Native (AIAN) older adults are less physically active than other racial/ethnic groups, putting them at highest risk for leading causes of preventable death and disability including heart disease, stroke, and some cancers. Walking is the preferred physical activity (PA) among AIAN older adults, yet little is known about how evidence-based walking interventions can be culturally-adapted and contextually-aligned to maximize their impact. We report on our use of Community Based Participatory Research (CBPR) principles to involve stakeholders in the design of a research protocol and intervention to increase walking among AIAN older adults, while building local capacity for conducting CBPR research. **Methods:** The research team participated in CBPR activities for one year to develop partnerships across two tribal regions in the Northwestern United States, obtain and document stakeholder input on research process steps, and qualitatively analyze meeting notes and transcripts to identify themes to inform design of a culturally relevant, feasible, sustainable walking program.

Results: An academic-community partnership was formed across two universities, one tribal health department, and one regional tribal association. Partners attended six community-based meetings (~N= 1478 attendees including AIAN older adults, adults, and youth) organized by AIAN entities across two states. Process steps for proceeding with the research project included: (1) establishing a Community Advisory Board (N=10 members, 100% AIAN; 50% ages 55+) to oversee research methods and support community priorities; (2) hiring a community liaison as a research team member to build local capacity; and (3) conducting community partner training on CBPR theory and methods. Themes related to PA promotion identified through community meeting notes and transcripts included preferences for: (1) inter-generational programming; (2) social interaction; (3) land-based activities; and (4) use of trauma-informed approaches.

Conclusions: Stakeholder-driven methods to develop culturally and contextually aligned interventions that encourage walking among rural AIAN older adults are critical to assure acceptability, sustainability and public health impact of PA interventions.

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“JUST LIKE WHEN A CAR IS RUNNING OUT OF GAS:” QUALITATIVE ANALYSIS OF STRESS, COPING AND HEALTH IN TAXI AND FOR-HIRE VEHICLE DRIVERS

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Objective: Tomorrow's health challenges call for improved mental and physical healthcare for the increasing numbers of diverse “gig economy” workers, like taxi/for-hire vehicle (FHV) drivers. Drivers are at risk for illnesses requiring behavioral management like cardiovascular disease, diabetes, obesity, hypertension, and cancer. Guided by the Explanatory Model for Illness and the Common Sense Model of Illness Cognition, we examined drivers' experiences of stress, health, and coping and explored the evolving taxi industry's impact on mental and physical health.

Methods: Concurrent with taxi industry changes in 2013-2018, 50 drivers completed 1-hour semi-structured in-depth interviews. Drivers were recruited from driver-frequented NYC sites (e.g., taxi garages). Eligible drivers were aged 20-85 years, were fluent in English, Arabic, Hindi, Bengali, Punjabi, Urdu, Spanish, French, or Fulani, and drove a NYC taxi/FHV for at least five shifts per week or 40 hours per week. Drivers with less than 2 years of experience driving an NYC taxi or less than 6 months of driving a green cab/Uber car were excluded. An interview guide elicited drivers' experiences and beliefs related to stress, health, and coping. The 7 coders, including a physician, a psychologist, community outreach workers, and research assistants experienced in working with drivers analyzed transcripts in Atlas.ti for themes using a grounded theory approach to develop a formal codebook.

Results: Codes included “stressor,” “psychological reaction,” “coping,” and “physical health.” A “lack of control” theme captured mental and physical health challenges reported by drivers and related to their coping strategies. Specific subthemes related to stress and poor health over which drivers lacked control included “physical environment,” “income,” “passengers,” and “narrowing career alternatives.” Coping strategies related to taking control through “taking responsibility” and “controlling emotions” versus ceding control through “fate/religion,” “letting go,” and “avoiding” stressors out of drivers' control.

Discussion: Drivers reported feeling stressed and being unable to engage in health behaviors due to lacking control over many aspects of their professional lives. Culturally tailored mental and physical health interventions must be designed to accommodate driver work environment and income. Interventions that promote taking control versus letting go as appropriate may decrease driver stress. Policy changes may be required.

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THE MODERATING EFFECT OF MINDFULNESS ON THE ASSOCIATION BETWEEN STRESSFUL RACIST EVENTS AND SELF-RATED HEALTH

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There is growing evidence that racial discrimination adversely affects health (Krieger et al., 2011) and that greater amounts of perceived discrimination are associated with poorer self-rated health among Black and African American populations (Cuevas et al., 2013), suggesting the need for interventions to reduce adverse health effects of racial discrimination. Mindfulness has been shown to have positive effects on mental health and has been studied as a buffer for negative mental health effects of discrimination (Shallcross & Spruill, 2018; Watson, Hill, & Case, 2019). However, the effect of mindfulness on self-reported physical health has had mixed results (see review by Alsubaie et al., 2017). This study examined the relationship between the experience of racist events, trait mindfulness, and self-rated health using a cross-sectional analysis of 233 self-identified Black or African American (156 female) students attending a large, urban, predominantly white, southeastern university. Greater mindfulness was found to be associated with a greater likelihood of good self-rated health ($p = .002$). Mindfulness also functioned as a buffer ($b = -.00$; $SE = .001$; $p = .022$); high levels of mindfulness were associated with a reduced association between racism-related stress and self-rated health. In addition, at higher rates of stress appraisal, mindfulness had less of an effect on the probability of reporting good self-rated health. The frequency of racist events experienced had no effect on self-rated health, which indicates that the appraisal of racist events as stressful has greater relevance for health than how often racist events are experienced. These results suggest that interventions focusing on mindfulness in racial minority populations may help mitigate the effects of stressful racist events on health especially when stress appraisal is at low to moderate levels.

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SELF-STIGMA, RESILIENCE, SOCIAL CONNECTEDNESS, AND DISTRESS AMONG FILIPINO DOMESTIC WORKERS IN HONG KONG: A MEDIATION MODEL

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Purpose: Filipino domestic workers (FDW) make up nearly 3% of the total population in Hong Kong. Studies suggested work- and immigrant-related stressors could put those FDW at risk for self-stigmatization and poor mental health. However, little is known about how those workers' individual characteristics (e.g., resilience, self-stigma) are associated with their coping resources and mental health. This study examined how self-stigma and resilience might be associated with distress among FDW in Hong Kong, and proposed the role of social connectedness (loneliness, perceived social support) in explaining such associations.

Methods: FDW living in the 18 major districts in Hong Kong (N=346) were recruited through respondent-driven sampling. Their levels of self-stigma, resilience, loneliness, perceived social support, and distress were measured in a cross-sectional survey.

Results: Correlation results indicated that self-stigma was associated with higher loneliness, less perceived social support, and higher distress ($r_s=0.20, -0.38$, and 0.33 respectively, $p<.01$), whereas resilience was associated with lower loneliness, higher perceived social support, and lower distress ($r_s=-0.16, 0.46$, and -0.19 respectively, $p<.01$). Path analyses results supported the proposed mediation model with a satisfactory model fit ($\chi^2(1)=0.07$, $p=.79$, CFI=1.00, TLI=1.01, RMSEA=0.00). Specifically, the indirect effect from self-stigma on distress via increased loneliness and reduced social support ($\beta=0.11$; 95%CI=0.08, 0.14) and the indirect effect from resilience on distress via reduced loneliness and increased social support ($\beta=-0.11$; 95%CI=-0.15, -0.08) were significant, supporting the mediating role of social connectedness in the associations between self-stigma/resilience and distress. Moreover, the direct effect from self-stigma (but not resilience) on distress also remained significant after considering the mediators ($\beta=0.20$; 95%CI=0.13, 0.26).

Conclusions: Self-stigma and resilience might contribute to mental health among FDW in Hong Kong through changing the perceptions of social connectedness. Our findings implied that interventions targeting at reducing self-stigma, enhancing resilience, training skills for facilitating social connectedness might alleviate distress among those workers. Considering the roles of individual characteristics and psychosocial factors could be a novel approach to address the increasingly important mental health issues among migrant workers.

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SOCIAL MEDIA USE AND WELL-BEING IN SEXUAL AND GENDER MINORITY YOUNG ADULTS

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Introduction: Social media can provide connection with others and access to social support. The relationships between social media use and facets of well-being among sexual and gender minority (SGM) young adults are not well-studied.

Methods: Participants were SGM young adults (N=302, M age = 21.9, 72.2% assigned female at birth) enrolled in Facebook smoking cessation interventions. Sexual identity was 17.2% gay, 16.9% lesbian, 59.3% bisexual and/or pansexual, and 6.6% other; gender identity was 61.3% cisgender, 14.6% transgender, and 24.2% other. Participants reported on maladaptive Facebook use (e.g., distress when unable to access social media, social media use that interferes with other obligations), hours of social media use per week, perceived social support, internalized SGM stigma, depressive symptoms, and smoking behaviors (i.e., cigarette dependence, number of cigarettes smoked in the past-week). Significant bivariate associations with maladaptive Facebook use were entered in an adjusted multiple linear regression analysis.

Results: Adjusting for demographic covariates, maladaptive Facebook use was significantly associated with greater internalized stigma ($r=.22$, $p<.001$) and depressive symptoms ($r=.19$, $p=.001$) and with less social support ($r=-.14$, $p=.017$). Greater use of social media was significantly associated with greater depressive symptoms ($r=.15$, $p=.01$). Maladaptive Facebook use remained significantly associated with internalized SGM stigma ($\beta=.22$, $p=.001$) when adjusting for other correlates.

Conclusions: Taken together, results suggest that maladaptive Facebook use among SGM young adults is associated with psychological stressors, including internalized stigma, low social support, and depressive symptoms. Social online communities, while accessible, may not provide a simple solution to addressing isolation, experienced stigma, and depression in SGM young adults.

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CONCORDANCE OF OBJECTIVE AND SUBJECTIVE MEDICATION ADHERENCE MEASURES IN AN HIV PILOT TRIAL

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Objective: Antiretroviral therapy (ART) adherence and viral suppression are critical to the “90-90-90” plan to end the HIV epidemic. That is, 90% of persons living with HIV (PLWH) knowing their status, 90% of PLWH in care and receiving antiretroviral medications, and 90% of PLWH on ART achieving viral suppression. Given the importance of medication adherence, this study examined rates of concordance among three measures: self-reported adherence, staff-directed unannounced pill counts, and laboratory-confirmed viral load.

Methods: Participants were 42 PLWH (M age = 47.5 years; 50% female; 33% black; 26% Hispanic/Latino) enrolled in a pilot trial examining the feasibility and acceptability of a mindfulness intervention to improve medication adherence and reduce risky sexual behavior. Data for the present analyses were collected at the three-month follow-up assessment. Self-reported adherence included three items regarding the past 30 days: number of days participant missed a dose; how often did participant take medication as instructed; and “how good of a job” participants did taking their medication as instructed. Pill counts were conducted by telephone by trained study staff. Participants were provided counting trays and instructed on how to count medication during initial in-person visit. Viral load suppression was defined as HIV-1 RNA fewer than 500 copies/mL. Bivariate correlations evaluated concordance rates among adherence and viral load measures.

Results: Over the previous month, participants reported missing at least one medication dose on two days (SD = 2.9), which is equivalent to a 93% adherence rate. Using a 5-point scale, participants described taking their medication as prescribed as “almost always” (M = 3.9, SD = 1.4) and rated their ability to take medication as prescribed as “very good” (M = 3.9, SD = 1.2). Based on pill counts, participants were adherent to 84% (SD = 21%) of their ART medication doses. HIV viral load data showed that 83% (SD = 38%) of patients were virally suppressed. Self-reported medication adherence (i.e., number of days missed) was significantly and negatively correlated with pill count data ($r = -.62$, $p < .001$) and suppressed viral load ($r = -.44$, $p = .003$). Pill count data and suppressed viral load were also significantly correlated ($r = .45$, $p = .009$).

Conclusion: Estimates of ART adherence differed slightly based on self-report (93%) and telephone-conducted pill counts (84%). Both methods demonstrated moderate concordance with biologically measured viral load. Although self-reported and pill count measures of medication adherence introduce human error, they appear to be good indicators of viral suppression for PLWH. With new methods to monitor medication adherence on the horizon (e.g., “smart” pills), future studies should continue to evaluate concordance between subjective and objective adherence measures to optimize patient health.

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DIFFERENT TYPES OF STIGMA AND ART ADHERENCE AMONG PEOPLE LIVING WITH HIV: THE MECHANISTIC ROLES OF ART KNOWLEDGE AND ART SELF-EFFICACY

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Background: Previous studies have demonstrated the negative relationship between HIV-related stigma and antiretroviral therapy (ART) adherence among people living with HIV (PLWH). Yet, there are few studies investigating the mechanisms of how different types of stigma affect ART adherence. Based on the information-motivation behavioral skills (IMB) theory, the current study proposed that different types of stigma could impair ART adherence through their negative influences on ART knowledge and ART self-efficacy. This study aimed to examine the mechanistic roles of ART knowledge and ART self-efficacy on the relationships between different types of stigma and ART adherence.

Method: Data were derived from a baseline survey of a prospective cohort study. Data collection was conducted from November 2017 to February 2018 in Guangxi, China. Six hospitals/clinics in five cities with the largest number of HIV patients were selected, and 1,198 PLWH were recruited. Participants were assessed on their sociodemographic characteristics, ART adherence, different types of stigma (i.e., anticipated, internalized, and enacted stigma), ART knowledge, and ART self-efficacy. Path analysis was used to examine the indirect effects from different types of stigma to ART adherence through ART knowledge and ART self-efficacy.

Results: Among the 1,198 PLWH, 64.4% were male, and mean age was 39.4 years. The indirect paths from anticipated stigma (std.β=-0.018, 95%CI: -0.004~-0.001, $p=0.013$) and internalized stigma (std.β=-0.045, 95%CI: -0.013~-0.004, $p<0.001$) to ART adherence through ART self-efficacy were statistically significant while the indirect path from enacted stigma to ART adherence through ART self-efficacy was marginally significant (std.β=-0.013, 95%CI: -0.013~-0.001, $p=0.056$). All types of stigma could impair ART self-efficacy among PLWH, which in turn could compromise their ART adherence. None of the indirect paths from three stigma to ART adherence via ART knowledge was significant.

Conclusion: The mechanistic roles of ART knowledge and ART self-efficacy are different on the relationships between different types of stigma and ART adherence. To intervene the negative impact of HIV-related stigma on ART adherence among PLWH, multilevel interventions targeting different types of stigma and improving ART self-efficacy and knowledge are needed.

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EVALUATING EFFECTIVENESS OF A TAILORED SUBSTANCE USE INTERVENTION FOR PEOPLE WITH HIV: IMPLEMENTATION OF PLUS IN NYC HIV CLINICS

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Background: People with HIV (PWH) use alcohol and drugs at rates higher than their HIV negative counterparts. This is particularly problematic because drug use is associated with difficulties with antiretroviral medication adherence. The Positive Living through Understanding and Support (PLUS) intervention previously demonstrated efficacy to reduce heavy drinking among PWH. The goal of the current study was to evaluate the effectiveness of PLUS when delivered by mental health care providers in HIV care clinics.

Methods: The study utilized a quasi-experimental design to evaluate the effectiveness of the PLUS intervention to reduce problematic alcohol and drug use among PWH. The intervention was delivered at a 3-site consortium of outpatient clinics, with follow-up assessments completed at 3-, 6-, 9- and 12-months post-intervention. At Clinic 1 (n = 40) and Clinic 2 (n = 22), participants received the PLUS intervention immediately after baseline, as did 22 participants at Clinic 3. At Clinic 3, an additional 90 were assigned to a wait-list control condition, who received the intervention after their 12-month follow-up. Eligible PWH were 18 years or older, prescribed ART, had a detectable viral load within the past year, and reported problematic drinking or recent drug use. Problematic alcohol and drug use were assessed using the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Abuse Screening Test (DAST-10).

Results: Results indicated that participants in the waitlist control group had stable AUDIT and DAST scores over the 12-month follow-up period. While some over-time trends in intervention groups were significant, their effect was small. As a result, there were no significant between-group difference in AUDIT or DAST scores across follow-up assessment time-points. Where present, small linear slope effects suggested that patients at lower-performing clinics with higher average baseline use benefited somewhat more from PLUS implementation.

Conclusions: The absence of intervention effects observed illustrates the importance of linking the goals of implementation research to clinic needs. New York City has achieved 90-90-90 goals and the 3 clinics involved in this trial had strong patient outcomes prior to implementation. Implementing an evidence based intervention at a high-performing clinic may not yield substantive changes in patient outcomes. Implementation researchers need to thoughtfully identify clinic needs in order to insure that intervention content addresses existing delivery challenges.

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SOCIAL SUPPORT MODERATES THE RELATIONSHIP BETWEEN SUBSTANCE USE AND MEDICATION ADHERENCE AMONG BLACK WOMEN LIVING WITH HIV

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Background: Black Women Living with HIV (BWLWH) bear the disproportionate burden of HIV as well as lower rates of antiretroviral therapy (ART) adherence and viral suppression compared to other racial/ethnic groups. This is linked to health disparities, structural inequities and psychosocial factors faced by BWLWH, which affect both access to and retention in care. However, the relationships between substance use, social support, and HIV-related health outcomes (i.e. viral suppression, ART adherence) have not been adequately explored among BWLWH. The present study seeks to add to existing literature by assessing how perceived social support (PSS) moderates the relationship between substance use and HIV viral load as well as medication adherence.

Methods: 119 BWLWH in the Southeastern United States completed self-report measures on PSS (the Multidimensional Scale of Perceived Social Support), substance use disorder (SUD), alcohol use disorder (AUD) via the Mini-International Neuropsychiatric Inventory and adherence. The Wisepill, an electronic monitoring device, also measured adherence in the past two weeks. HIV viral load was assessed via blood specimen.

Results: Linear regressions were conducted to examine the effects of PSS on adherence and viral load log. Higher PSS from friends ($\beta = -.263$, $p = .008$) and significant others ($\beta = -.219$, $p = .025$) predicted lower viral load. Furthermore, there were three trends, as PSS from family predicted lower viral load ($\beta = -.191$, $p = .061$) and both PSS from friends ($\beta = .162$, $p = .089$) and PSS from significant others ($\beta = .170$, $p = .070$) predicted self-report adherence in the past week. PSS did not predict SUD or AUD in the past 12 months. However, moderational analyses indicated that SUD predicted lower Wisepill adherence in the past week ($\beta = -.273$, $p = .035$) and past two weeks ($\beta = -.273$, $p = .033$) only for women low in PSS from friends. SUD also predicted lower Wisepill adherence in the past two weeks only for women who were low in PSS generally ($\beta = -.294$, $p = .024$). Interestingly, for women who were high in general PSS, SUD predicted higher Wisepill adherence in the past four weeks only ($\beta = .360$, $p = .006$).

Conclusion: Our findings indicate that adherence and viral load may be more easily bolstered by understanding the role of various forms of social support and SUDs among BWLWH. Social support interventions for BWLWH with SUDs may improve medication adherence, the corollary of which is viral suppression.

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DEVELOPING AND PRETESTING A PREP PEER NAVIGATION INTERVENTION FOR YOUNG ADULT LATINO MEN WHO HAVE SEX WITH MEN

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Pre-Exposure Prophylaxis (PrEP) is an effective medication taken daily to prevent HIV infection, especially when used with condoms. Latino men who have sex with men (MSM) are at high risk for new HIV diagnoses and are less likely to take PrEP compared with non-Hispanic White MSM. Latino MSM also face numerous personal, interpersonal, and logistical barriers to obtaining PrEP. Patient navigation is a barrier-focused intervention model focused on assisting individuals in obtaining recommended healthcare in a timely manner. This study describes an iterative process of developing a peer patient navigation (PN) intervention to assist young adult Latino MSM access PrEP. In collaboration with a Participatory Planning Group and using Social Cognitive Theory, the project team developed both English and Spanish-language patient-focused materials along with a flexible manual for the peer navigator. Intervention development included the following steps: 1) developing initial program concepts (e.g., key phrases, visuals to portray main ideas) for comprehension and attractiveness; 2) developing draft PN modules for participants facing a particular barrier; and 3) producing finalized materials with the assistance of a graphic design team. Four rounds of pretesting interviews with 18 young adult Latino MSM (mean age: 24.4 years, 50% Spanish speaking) were conducted to modify intervention materials, starting with initial program concepts and moving into intervention execution. Data from audio-recorded pretesting interviews were summarized and used to modify the intervention, which was then reviewed by additional interview participants. This iterative process continued until participants expressed positive feedback about modules and materials and expressed understanding of the content. The final produced PN intervention includes an introductory module, five educational modules (HIV prevention, PrEP introduction, PrEP efficacy, PrEP side effects, and PrEP adherence), and a module focused on decision support. Patient education is facilitated using infographics, palm cards, and a decision support tool. The educational modules are designed to be delivered as needed in tandem with personalized strategies to improve access and decrease barriers to PrEP initiation and adherence. Future research will examine feasibility of delivering the PrEP PN intervention in a randomized controlled trial.

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A MIXED-METHODS EXPLORATION OF FAITH, SPIRITUALITY, AND HEALTH PROGRAM INTEREST AMONG OLDER AFRICAN AMERICANS WITH HIV

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Background: African Americans and persons living with HIV (PLWH) are living into older age with more complex care needs than non-PLWH. Evidence is needed to inform programs to promote quality of life and advance care planning (ACP) health literacy in caregiving relationships of the populations. We explored faith/spirituality-related correlates of interest in participating in a potential program on ACP and stress management among African American PLWH and their main caregivers.

Methods: Data were from the AFFIRM Care study. Participants were recruited from an HIV clinic and completed surveys, interviews, and focus groups. Quantitative analyses included logistic regression. Qualitative data were coded using grounded theory.

Results: Nearly half of participants had less than a high school education (47.9%), and roughly 90% of participants had heard of at least one ACP-related topic although most had only heard of advance directives (86.6%; N=315). Qualitative themes related to quality of life emphasized faith/spirituality, specifically: (1) Coping with life challenges; (2) Motivation to improve health for loved ones; and (3) Support programs for people living with HIV (N=39). Regarding interest in future quality of life programs, roughly half of participants expressed great interest (53.0%). Statistically-significant positive correlates included: satisfaction with religion/spirituality ($p < .05$), pain intensity ($p < .01$), and less comfort accepting care from social network members ($p < .10$; N=288). Negative correlates included greater HIV-related stigma ($p < .10$), and preference for initiating discussions of ACP with healthcare providers prior to major illness (as compared to other disease stages) ($p < .05$).

Conclusions: Results suggest the importance of addressing faith/spirituality in programs to promote ACP health literacy and engagement and quality of life among African Americans PLWH and their main caregivers. Prioritizing skill-building and grounding in community- and faith-based settings with input from faith leaders may reduce inequities in quality of life and improve ACP outcomes among African Americans with HIV.

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FOCUS ON SINGLE TABLET REGIMEN AND LIPID PROFILE AMONG YOUTH LIVING WITH HIV IN MULTIDISCIPLINARY ADOLESCENT HIV CARE SETTINGS

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Background: HIV itself and antiretroviral therapy (ART) are known to contribute to the elevated risk of cardiovascular disease (CVD), including lipid abnormalities. Although early treatment with ART might reduce the negative effect of HIV on overall cardiovascular risk, many HIV medications have intrinsic toxicity profiles. Single tablet regimens (STRs) have become an integral part of HIV management. STR has the potential for improved adherence due to a lower pill burden, especially among youth living with HIV (YLH). The current study examined whether detectable VL and STR contribute to lipid abnormalities among YLH aged 14–26y.

Methods: We analyzed a subsample of 398 de-identified electronic health records of YLH extracted from multidisciplinary adolescent HIV clinics for the *Adolescent Medicine Trials Network* 154 Cascade Monitoring Protocol. We conducted bivariate and multivariable logistic regression analyses to examine differences in lipid abnormalities by VL and STR status.

Results: Our sample included a higher proportion of black (305, 76.8%) and males (69.6%) with mean age of 21y. Nearly half (44.4%) of YLH had a detectable VL and a majority of YLH were currently on ART. Nearly half (40.7%) of YLH did not meet the ideal range of HDL and 28.5% were in the clinically high range of LDL cholesterol. Similarly, 15.1% of YLH had high total cholesterol and 15.4% had high triglycerides. Among those who were currently prescribed STR, we observed a significantly lower proportion of YLH with high total cholesterol compared to those who were not on STR (14.2% vs. 33.3%; $p < 0.05$). Among those with detectable VL, we observed a significantly higher proportion of YLH with low HDL compared to those without detectable VL (50.9% vs. 33.3%; $p < 0.001$). After adjusting for demographic and clinical covariates, treatment with STR significantly decreased the odds of having high total cholesterol (CI 0.03, 0.59; $p < 0.01$) and low HDL (CI 0.03, 0.88; $p < 0.05$) compared to those not on STR. On the other hand, having a detectable VL significantly increased the odds of having low HDL compared to those without detectable VL (CI 1.24, 3.47; $p < 0.01$).

Conclusions: Detectable VL significantly increased the odds of having low HDL, while the use of STR is associated with a more favorable lipid profile. Our findings suggest the adoption of STR may be an important strategy to lower VL and protect YLH against metabolic dysfunction associated with HIV.

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CIGARETTE SMOKING AND METABOLIC SYNDROME IN YOUTH LIVING WITH HIV: FINDINGS FROM ELECTRONIC HEALTH RECORDS IN THE UNITED STATES

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Background: Detectable viral load (VL) has been found to be associated with cardiovascular disease (CVD) and smoking among HIV-positive population. A recent study reported 20.4% of youth living with HIV (YLH) smoking cigarette daily or almost daily, and observed significance of cigarette smoking with higher mean log 10 VL. Metabolic changes leading to the development of atherosclerosis can start early in life, but are often undiagnosed in their early stages. Metabolic syndrome is a growing concern that may surpass smoking as one of the leading risk factors of CVD. We examined the association of smoking and metabolic syndrome with VL in YLH aged 14–26y.

Methods: The data for this study were drawn from the *Adolescent Medicine Trials Network* 154 Cascade Monitoring Protocol. De-identified electronic health records of YLH who received care in 2016 were extracted from multidisciplinary adolescent HIV clinics across the United States. This study utilized a subsample of 398 YLH. Multivariable linear regression was used to examine whether smoking and components of metabolic syndrome are related to a greater likelihood of high VL.

Results: Our sample included a higher proportion of blacks (76.8%) and males (69.6%) with mean age of 21y. Overall, 44.4% had a detectable VL, 26.9% were cigarette smokers based on ICD-10 diagnoses of tobacco dependence, and 27.6% met the criteria for metabolic syndrome. In bivariate analyses, having a detectable VL compared to those without detectable VL significantly increased the odds of being a smoker ($p < 0.05$) and were more likely to have low HDL cholesterol ($p < 0.001$). Subsequent analyses controlled for demographic and clinical covariates demonstrated that being a smoker was associated with a log 10 increase in VL copies/mL by 0.36 (CI 1.08, 1.92; $p < 0.05$) and having two components of metabolic syndrome was associated with a log 10 increase in VL copies/mL by 0.45 (CI 1.20, 2.03; $p < 0.01$).

Conclusions: Smoking and the presence of two components of metabolic syndrome were associated with VL non-suppression, highlighting the importance of smoking cessation in viral suppression and in reducing the overall burden of CVD risk in YLH. Our findings of greater prevalence of metabolic syndrome suggests routine monitoring of metabolic risks in YLH.

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INTERPERSONAL AND COMMUNITY INFLUENCES ON PREP INITIATION AND ADHERENCE AMONG YOUNG ADULT LATINO MEN WHO HAVE SEX WITH MEN

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Introduction: Men who have sex with men (MSM) are the largest at-risk population for new HIV diagnoses, and HIV diagnoses are increasing among young Latino MSM. Pre-Exposure Prophylaxis (PrEP) is an effective medication taken daily to prevent HIV, especially when used with condoms. However, Latino MSM are less likely to take PrEP compared with non-Hispanic White MSM. The purpose of this study was to identify interpersonal- and community-level barriers and facilitators to PrEP initiation and adherence among young Latino MSM.

Methods: Using purposeful sampling, 27 Latino men, ages 18-29 years, participated in semi-structured in-depth interviews assessing barriers and facilitators to PrEP initiation and adherence and completed self-report demographic surveys. Interviews were audio recorded and transcribed verbatim. Content analysis was used to identify both *a priori* and emerging themes. Two coders independently coded each transcript, then resolved discrepancies via consensus.

Results and Discussion: Community and interpersonal influences, PrEP stigma, and sexual orientation discrimination all contribute to PrEP initiation and adherence among Latino MSM. Participants described a complex interaction between the LGBTQ and Latino communities' perspectives on PrEP. Most mentioned the LGBTQ community as being supportive and described learning about PrEP from their community, LGBTQ social media, and support groups for MSM using PrEP. Participants also mentioned PrEP stigma within the Latino and LGBTQ communities and values placed on masculinity/*machismo*, within the Latino community, as barriers to PrEP uptake and adherence. Stigma and sexual orientation discrimination were both emerging themes as participants indicated LGBTQ and Latino communities, family, friends, and the healthcare system as sources of stigma and discrimination. Participants feared their healthcare provider would make it difficult to obtain a PrEP prescription, due to PrEP stigma and sexual orientation discrimination.

Conclusions: Although PrEP can significantly reduce HIV infections among at-risk populations, Latino MSM continue to access PrEP less than non-Hispanic White and Black MSM populations. Interactions between interpersonal- and community-level factors influence PrEP initiation and adherence among Latino MSM. Identified facilitators and barriers should be targeted by interventions to reduce HIV risk and increase PrEP initiation and adherence among Latino MSM.

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EFFECTIVE TRAINING AND QUALITY ASSURANCE STRATEGIES ASSOCIATED WITH HIGH-FIDELITY EBI IMPLEMENTATION IN PRACTICE SETTINGS

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Background: High quality implementation of evidence-based interventions (EBIs) is important for program effectiveness and is influenced by training and quality assurance (QA). However, gaps in the literature contribute to a lack of guidance on training and supervision in practice settings, particularly when significant program adaptations occur.

Purpose: We examined training and QA in relation to program fidelity among organizations delivering a widely disseminated HIV counseling and testing EBI in which significant adaptations occurred due to new testing technology.

Methods: Using a maximum variation case study approach, we examined training and QA in organizations delivering the program with high and low fidelity (Agencies: 3 = high fidelity; 3 = low fidelity (total number of personnel interviewed = 25; clients interviewed = 194).

Results: We identified themes that distinguished high- and low-fidelity agencies. For example, high-fidelity agencies more often employed a team approach to training; demonstrated use of effective QA strategies; leveraged training and QA to identify and adjust for fit problems, including challenges related to adaptations; and understood the distinctions between the primary EBI and other testing programs. The associations between QA and fidelity were strong and straightforward, whereas the relationship between training and fidelity was more complex.

Conclusions: The implementation of behavioral interventions in public settings requires high quality training and QA approaches that can address program fit and program adaptations. The study findings reinforced the value of using effective QA strategies. Future work should address methods of increasing program fit through training and QA, identify a set of QA strategies that maximize program fidelity and is feasible to implement, and identify low-cost supplemental training options.

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BARRIERS AND FACILITATORS TO LATINO MEN WHO HAVE SEX WITH MEN ENGAGING IN HIV-PREVENTION AND BEHAVIORAL HEALTH SERVICES

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Background: Latino gay, bisexual, and other men who have sex with men (MSM) experience disproportionate rates of new HIV infections across the U.S. In Miami, the U.S. city with the highest rate of HIV infections in the U.S., Latino MSM also lead in HIV incidence, while uptake of HIV-prevention (e.g., pre-exposure prophylaxis [PrEP]) and behavioral health services is lacking. The current study characterizes barriers and facilitators to Latino MSM engaging in HIV-prevention and behavioral health services.

Method: Participants include 26 Latino MSM (61.5% U.S. born) and 10 key informants who work in HIV-prevention and/or behavioral health services with Latino MSM in the Miami, FL area. Latino MSM were recruited from a pool of participants who were eligible for our HIV-prevention and behavioral health clinical trials and participated (“engagers;” n = 15) or did not participate (“non-engagers;” n = 11). We conducted semi-structured interviews in English, Spanish, or both regarding Latino MSM’s barriers and facilitators to engaging in HIV-prevention (regular HIV testing, PrEP) and behavioral health services. Interviews were recorded and transcribed for thematic analysis in NVivo 12. The first author reviewed 10 transcripts to develop an initial codebook, with iterative revisions to the codebook as new codes emerged from the data.

Results: The qualitative analysis identified 115 codes grouped into 10 categories that reflect Latino MSM’s barriers and facilitators to engaging in HIV-prevention and behavioral health services. The categories include: (1) degree of perceived need or relative importance, (2) anticipated emotional responses to engaging in services, (3) anticipated consequences of engaging in services, (4) degree of knowledge or awareness of health and related services, (5) views on the medical system and services, (6) influence of peers/social network, (7) influence of providers/staff/organizations, (8) cultural factors, (9) structural factors, and (10) relevance of public health/outreach messaging. Specific codes within each category will be further discussed in the presentation.

Conclusions: Findings highlight key factors that may need to be addressed by developing new implementation strategies to scale up and disseminate needed HIV-prevention and behavioral health services to Latino MSM. The findings also highlight the multilevel nature of these barriers and facilitators, implicating the need for coordinated individual, interpersonal, and structural/community level implementation strategies to achieve full engagement in needed services among Latino MSM.

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FREQUENCY OF AND REASONS FOR INTEGRATED PRIMARY CARE CONSULTATIONS IN TWO AMBULATORY CLINICS IN AN UNDERSERVED COMMUNITY

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Introduction: Integrated primary care (IPC) is a method for expanding behavioral health services within primary care clinics. Behavioral health consultants (BHC) are capable of addressing a wide range of behavioral and mental health concerns in IPC. However, with significant variation in conceptualization and implementation of IPC across clinics, little is known regarding the utilization of IPC to address a variety of concerns. Further, it is unclear if there are operational variations between primary care settings, such as internal medicine (IM) and family medicine (FM).

Methods: Twelve months of IPC data were reviewed from two independent, co-located ambulatory clinics in Flint, Michigan. Primary care physicians (PCP) at these clinics typically treat underserved, low-SES patients with diverse backgrounds. IPC referrals were reviewed to determine the frequency and reasons for referrals, as well as to identify any differences between IM and FM clinics. Referrals were coded as mental health (e.g., depression), behavioral health (e.g., chronic pain), or combined mental and behavioral health (e.g., substance use).

Results: There were a total of 254 referrals, with 201 referrals in FM and 53 in IM. Mental health referrals were most common in both FM (73%) and IM (60%). In FM, depression (33%), anxiety (16%), adjustment disorder (11%) and bipolar disorder (10%) were the most frequent reason for referral. FM made referrals for behavioral health reasons (17%) such as diabetes (6%), smoking cessation (6%), and weight loss (5%). In IM, depression (42%), anxiety (21%), diabetes (9%), bipolar disorder (8%), sleep hygiene (8%), weight loss (6%), chronic pain (6%), and differential diagnosis (6%) were the most common reasons for referrals. IM made referrals for behavioral health (19%) or combined mental and behavioral health concerns (19%) more frequently than FM.

Conclusions: With a longer history of integration, IPC was more frequently utilized in FM, with an emphasis on referrals for mental health. While IM physicians made less frequent referrals, their reasons for referrals were more varied, including more behavioral health concerns compared to FM. These results provide direction for future IPC development, with attention to goals to increase utilization for behavioral health concerns. Differences between FM and IM clinics, plans to address these areas of need, and implications for IPC in the broader community will be reviewed.

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HEALTH CHARACTERISTICS & ENGAGEMENT OUTCOMES OF COMPLEX PATIENTS IN THE UNIVERSITY OF UTAH HEALTH INTENSIVE OUTPATIENT CLINIC

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Background: Intensive Outpatient Care Programs, like the UofU Health Intensive Outpatient Clinic (IOC), expand primary care services for high-risk, high-need patients through interdisciplinary, team-based, and personalized care that addresses patients' medical, behavioral health, and social needs. Recent literature suggests that to be successful, these clinics must improve patients' engagement. To improve the effectiveness of these programs, it is important to characterize the heterogeneity in patients' health and social needs, and to evaluate the clinic's impacts on patient engagement outcomes.

Aim: To characterize the health status of patients seen in the IOC and examine whether their engagement outcomes improved over 6 months of care.

Methods: Patients' health across three domains (i.e., chronic illness, behavioral health, and pain) was summarized with electronic health record data, using ICD-9/10 diagnosis codes and associated Clinical Classifications Software (CCS) categories from any visits after the IOC intervention began (January 2017–August 2019). Patients' multi-morbidity at their first IOC visit was partially summarized using 12 CCS categories corresponding to some of the most prevalent conditions: chronic illness (5 CCS codes; e.g., diabetes mellitus, diseases of the heart); behavioral health (3 CCS codes: mood/anxiety/substance-related disorders); and pain (4 CCS codes: e.g., musculoskeletal/joint disorders). Engagement was indexed by online surveys (Modified Picker Survey (communication), Patient Trust Scale, and Self-Efficacy Scale), completed by a subset of patients who received the IOC intervention for at least 6 months. Paired *t*-tests evaluated pre-post improvements in engagement from baseline to 6-month follow-up.

Findings: Of 121 patients ages 20 to 72 (65% female; 79% white; 9% Hispanic/Latinx; 82% insured through Medicaid; *Mage* = 47 years(*SD*=11.8)) seen in the IOC, 75% had a chronic illness, 81% had a behavioral health diagnosis, and 77% experienced pain. The most prevalent chronic illnesses were hypertension (75%), GERD (67%), asthma (48%), and type 2 diabetes (39%). The most prevalent behavioral health diagnoses were major depression (81%), nicotine dependence (48%), anxiety (40%), PTSD (34%), and alcohol and drug dependence (21%). The most prevalent pain diagnoses were chronic pain (77%), low back pain (52%), and headache (45%). IOC survey participants (*n* = 39; demographics similar to full sample), had significant improvements in their communication with care team, trust in care team, and self-efficacy for disease management ($t_{(38)}=5.45, p<.001$, $t_{(36)}=2.40, p=.022$, and $t_{(38)}=2.41, p=.021$; respectively).

Conclusion: The IOC serves diverse subpopulations of high-need patients and has led to improvements in patients' engagement with their healthcare.

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BARRIERS TO HPV VACCINE SERIES COMPLETION IN AN INSURED POPULATION

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Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States. Infection with certain types of HPV can lead to cervical cancer as well as other cancers in both men and women. HPV vaccines are safe and efficacious for preventing certain types of HPV infection. However, individuals must receive either 2 doses (for ages 9-14) or 3 doses (for ages 15 and older) for complete immunization. The requirement for multiple doses may limit the effectiveness of the HPV vaccine for cancer prevention. To better understand barriers to completing the multiple-dose HPV vaccine series, we conducted a pilot study among members of an integrated health care system (Kaiser Permanente Washington) who had clinical documentation of only one dose of HPV vaccine. We surveyed parents or legal guardians of 11-17-year-old girls (*n*=10) and boys (*n*=18), as well as 18-31-year-old women (*n*=20) and men (*n*=9), about their reasons for not completing the HPV vaccine series. Most participants (70.2%) were non-Hispanic white, and most (77.2%) reported the highest level of education attained by an immediate family member as a bachelor's degree or higher. Among parents of children, commonly reported barriers to HPV vaccine series completion included a lack of awareness about the need for additional doses or a lack of clinician recommendation for additional doses (28.6%), as well as the inconvenience of returning for additional doses (17.9%). Concerns about the HPV vaccine or vaccines in general were more common among parents of girls (30.0%) compared with parents of boys (16.7%). Among adult participants, barriers to HPV vaccine series completion included the inconvenience of returning for additional doses (31.0%), a lack of awareness or a lack of clinician recommendation for additional doses (10.3%) and forgetting (10.3%). Our findings suggest opportunities for clinicians and health care systems to play a greater role in promoting HPV vaccine series completion. For example, clinicians could counsel patients about the cancer-prevention benefits of HPV vaccination and the need for multiple doses, while addressing parents' psychological barriers by listening to and addressing their concerns about the vaccine. Health care systems could provide cues to action through electronic health record prompts for clinicians and reminder letters, emails, phone calls, or text messages for patients. Finally, health care systems could address the inconvenience of obtaining multiple doses by offering HPV vaccination in school-based health centers, pharmacies, and mobile immunization clinics, while also encouraging opportunistic vaccinations. Future research could explore the effectiveness of these and other health promotion strategies to facilitate completion of the HPV vaccine series.

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LONG-TERM EFFECTIVENESS OF IMPROVING ACCESS TO PSYCHOLOGICAL THERAPIES (IAPT) IN NORWAY: A RANDOMIZED CONTROLLED TRIAL

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Background: Prompt Mental Health Care (PMHC, the Norwegian adaption of the English program Improving Access to Psychological Therapies, IAPT) has been found successful in the short-term in alleviating symptoms of anxiety and depression, and in improving functional status, health-related quality of life and mental wellbeing, also when compared to treatment as usual (TAU). However, long-term outcomes of any IAPT-like treatment model compared to TAU have yet to be investigated.

Objectives: To investigate the effectiveness of PMHC treatment compared to TAU 12 months after PMHC entry.

Method: Randomized controlled trial with parallel assignment in two PMHC sites (Sandnes and Kristiansand) from November 2015 to March 2018. In total, 681 adults (aged ≥18 years) considered for admission to PMHC due to anxiety and/or mild to moderate depression (Patient Health Questionnaire (PHQ-9)/Generalized Anxiety Disorder scale (GAD-7) scores above cut-off) were randomly assigned (70:30 ratio: n=463 to PMHC, n=218 to TAU) using simple randomization within each site with no further constraints. Main outcomes were recovery rates and changes in symptoms of depression and anxiety from baseline to 12 months follow-up. Secondary outcomes functional status, health-related quality of life, mental wellbeing and work participation.

Results: 12 months after baseline, the reliable recovery rate was 59.4% in PMHC and 36.6% in TAU, yielding a between-group effect size of 0.51 (95%CI: 0.26 to 0.77, $p < 0.001$). Differences in change of symptoms gave between group effect sizes of -0.67 (95%CI: -0.99 to -0.36, $p < 0.001$) for depression and -0.71 (95%CI: -1.15 to -0.27, $p < 0.001$) for anxiety, both in favor of PMHC. PMHC was also at 12 months more effective than TAU in improving functional status (between-group effect size: -0.42 (95%CI: -0.72 to -0.12)), health related quality of life; (-0.55 (95%CI: -0.96 to -0.15)) and mental wellbeing (0.61 (95%CI: 0.61 to 0.93)). Based on the current data, there was no evidence for an effect of PMHC on work participation.

Conclusions: Effects achieved during treatment with PMHC, in symptom alleviation, as well as functional status, health-related quality of life and mental wellbeing, were maintained also after end of care. At 12 months follow-up, PMHC was still substantially more effective than TAU on all these measures. Future studies with more statistical power should provide more precise estimates of the effect of PMHC on work participation.

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MENTAL HEALTH SELF-STIGMA AND PERCEIVED LEVELS OF SOCIAL SUPPORT ON MENTAL HEALTH OUTCOMES AMONG PACIFIC ISLANDERS

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Background: In the United States, Pacific Islanders (PIs) endure heavy mental health burden yet report low use of mental health services. Research on Pacific Islanders mental health is scarce, especially in regards to self-stigma and social support.

Aim: The aim of the current study was to investigate how perceived levels of social support and levels of self-stigma moderate mental health outcomes (depression, anxiety, and stress) among PIs.

Methods: PIs with no previous mental illness diagnosis, between the ages of 18 and 35 and resided in California (N=213), were electronically surveyed about their mental health, perceptions about mental health, and perceived levels of social support. Mental health outcomes were assessed using the Depression, Anxiety, and Stress Scale (DASS-21). Perceived levels of social support were assessed using the Multidimensional Scale of Perceived Social Support (MSPSS). Levels of self-stigma were assessed using the Self-Stigma of Mental Illness Scale (SSMIS). A series of ordinary least square regression models were tested to examine the effect of mental health self-stigma and perceived social support (friends, family, significant other) on depression, anxiety, and stress.

Results: Over a quarter of the sample was classified as reporting above normal levels of depression (25.3%), stress (26.8%), and anxiety (34.3%). Unlike family support with a protective effect, perceived social support from friends was associated with higher level of depression and amplified through an interaction with mental health self-stigma ($ps < .05$). Similar findings were found with higher levels of anxiety and stress.

Conclusion: These results suggest that the interaction between mental health self-stigma and social support from friends may negatively affect multiple aspects of mental health more so than other forms of social support. Future interventions to reduce self-stigma may improve mental wellness among young adult PIs.

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PERCEIVED SOCIAL SUPPORT MEDIATES THE ASSOCIATION BETWEEN CUMULATIVE HEALTH RISK AND HEALTH OUTCOMES AMONG HOMELESS ADULTS

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Introduction: Individuals experiencing homelessness are at greater risk of exposure and vulnerability to health risk factors leading to diminished physical and mental health. However, evidence is lacking on the mediating role of social support in the association between health risk factors and negative health outcomes among homeless adults. We examined the potential mediating role of social support on the association between cumulative health risk and poor health outcomes among adults experiencing homelessness.

Method: Adults experiencing homelessness were recruited from six homeless shelters in Oklahoma City (n=567). Participant's health outcomes measured included, depression assessed using the eight-item Patient Health Questionnaire, post-traumatic stress disorder (PTSD) assessed using the four-item Primary Care Post-Traumatic Stress Disorder screener and self-rated overall health status on a five point Likert type scale (1=Excellent to 5=poor). Urban life stress (Urban Life Stress Scale), perceived stress (Perceived Stress Scale) and distress intolerance (Distress Tolerance Scale) were used as latent construct of the cumulative health risk (CHR) with higher values representing greater risk. The total score from the interpersonal support evaluation list (ISEL-12) was used to measure the perceived availability of social support. Covariate adjusted mediation models were conducted to evaluate the indirect effects of cumulative health risk on health outcomes through perceived social support.

Results: Majority of the sample were males (63%), white/non-minority (57%), not married (88%) and unemployed (88%). Thirty-one percent of the adults experiencing homelessness had depressive symptoms, 32% screened positive for PTSD symptoms and 37% rated their health as poor/fair. According to the bootstrapped 95% confidence intervals, the indirect effect of CHR on depression through perceived social support (b=0.160, 95% CI =0.059, 0.155) and CHR on poor health through perceived social support (b=0.052, 95% CI =0.006, 0.103) was significant. The indirect effect of CHR on PTSD through perceived social support was not significant (b=0.045, 95% CI =-0.003, 0.093).

Conclusions: Social support partially mediates the association of cumulative health risk on depression and poor health. Providing social support in the form of appraisal, belonging, and tangible support could provide better results for reducing depression symptoms and improve health status among homeless adults.

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CLINICAL TRIAL OF REMOTELY ADMINISTERED, MOBILE-BASED ATTENTION MODIFICATION FOR POSTTRAUMATIC STRESS SYMPTOMS

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Although behavioral therapies are effective for posttraumatic stress disorder (PTSD), patient access is limited. Attention bias modification (ABM), a cognitive training intervention that aims to reduce attention bias for threat, can be broadly disseminated using technology. We remotely tested an ABM mobile app for PTSD symptoms (PTSS). Participants with clinically significant PTSS (PTSD Checklist > 33; N=689; M age = 32; 80% female) were randomly assigned to personalized ABM, non-personalized ABM, or placebo training. ABM was a 12-day modified dot-probe paradigm with threatening and neutral words. Primary outcomes of PTSS and anxiety were collected at baseline, post-training, and 5-week follow-up. Mechanisms, assessed during treatment, were attention bias and self-reported threat sensitivity. Data collection was completed in 10 months with 75% of participants that completed day one on the app completing at least 10 out of 12 total training sessions. No group differences emerged on outcomes or attention bias. Non-Personalized ABM showed greater reduction in self-reported threat sensitivity during training compared to Placebo (p=.044). This study is the largest mobile-based trial of ABM to date. Data highlight high feasibility and acceptability of a remotely conducted PTSD intervention. However, our specific form of ABM was not efficacious in reducing PTSD severity.

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IMPLEMENTING A DBT GROUP INTERVENTION IN A PRIMARY CARE SETTING: A FEASIBILITY AND ACCEPTABILITY STUDY

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People in the United States are more likely to seek mental health treatment from primary care providers than mental health specialists. Incorporating effective transdiagnostic interventions in integrated behavioral health settings that can address a variety of psychological problems across clinical severities can reduce burden on primary care providers and increase the accessibility of evidence-based treatments. Dialectical Behavior Therapy (DBT) is a comprehensive treatment originally developed to treat borderline personality disorder and suicidality whose behavioral skills teachings have been adapted to meet the needs of various clinical populations. DBT skills-only interventions have been delivered effectively in diverse settings within transdiagnostic populations but have not been researched directly in primary care settings. This year-long pilot study aimed to test the feasibility and acceptability of a modified DBT skills-only group intervention in a primary care setting. The DBT skills groups were open enrollment, rolling admissions, and ran continuously for 50 weeks. Participants were 35 adult patients of a primary care medical practice struggling with a variety of mental health challenges; all participants received the active intervention. Results showed that the intervention was feasible and acceptable, with high ratings of enjoyment, skill helpfulness, and skills practice across weekly and post-treatment measures. Both quantitative and qualitative measures indicated mindfulness skills were the most helpful and frequently used skills by participants. Paired t-tests showed clinically significant reductions in participant somatization, $t(33) = 2.99$, $p = .005$, depression, $t(33) = 2.83$, $p = .008$, rumination, $t(33) = 3.13$, $p = .004$, and emotion dysregulation, $t(33) = 2.34$, $p = .025$, and significant increases in participant skills use, $t(32) = -3.65$, $p = .001$, in the intent-to-treat sample ($N=35$) with small-to-medium effect sizes. Medium-to-large effect sizes were found in the subset of the sample that received an adequate dose of the intervention ($N=16$). Hierarchical linear models demonstrated a statistically significant effect of time on decreases in weekly somatization, $t(210.5) = -5.04$, $p < .0001$, depression, $t(209.1) = -7.25$, $p < .0001$, and anxiety, $t(157.8) = -4.45$, $p < .0001$, symptoms. These preliminary data support the clinical utility of using a subset of DBT skills as a transdiagnostic group intervention in primary care settings.

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PATTERNS AND CORRELATES OF DEPRESSION AND ANXIETY AMONG LATINA IMMIGRANT WOMEN

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Background: Latina immigrant women in the United States are at increased risk of adverse mental health outcomes due to economic, political, cultural and social stressors related to migration and resettlement. However, few studies have described correlates of depression and anxiety symptoms among Latina immigrant women.

Methods: Our study used data collected as part of the Amigas Latinas Motivando el Alma (ALMA) study, which is evaluating a community-based intervention to reduce stress, depression, and anxiety symptoms among Latina immigrant women ($N = 109$). Interviewers administer baseline surveys that assess demographics, depression symptoms (PHQ-9), anxiety symptoms (GAD-7), immigration-related stressors, self-compassion, and resilience. We used descriptive statistics, chi-square statistics and t-tests to describe correlates of depression and anxiety in the sample.

Results: Participants had a mean age of 41 years, 85% were from Mexico, and had lived in the United States 15 years on average. At baseline, 24% of participants reported moderate to severe depressive symptoms (overall mean PHQ-9 total score of 7.1) and 29% of participants reported moderate to severe anxiety symptoms (overall mean GAD-7 total score of 7.0). Higher scores of depressive symptoms were associated with having smaller social networks ($p=0.05$), increased social isolation ($p=0.00$), increased perceived stress ($p=0.00$), and higher levels of immigration-related stress ($p=0.01$). Higher scores of anxiety symptoms were associated with having smaller social networks ($p=0.03$), increased social isolation ($p=0.00$), increased perceived stress ($p=0.00$), and immigration-related stress ($p=0.00$). Depression and anxiety symptoms were also negatively associated with scores of self-compassion ($p=0.00$) and resilience ($p=0.01$).

Conclusions: Findings suggest that Latina immigrant women experience multiple types of stressors and that these are associated with increased symptoms of depression and anxiety. Findings also suggest that resilience and self-compassion may be related to lower levels of depression and anxiety. More research is needed to further assess the relationship between stress and poor mental health among Latina immigrants, such as types of stressors and severity. Latina immigrants may benefit from interventions that reduce social isolation and promote self-compassion, resilience, and stress-reduction.

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SELF-COMPASSION AS A MECHANISM THROUGH WHICH ATTACHMENT INFLUENCES MENTAL HEALTH AND QUALITY OF LIFE

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Background: Self-compassion can be defined as exercising kindness towards oneself when faced with personal suffering. The ability to be self-compassionate may be shaped by early attachment experiences and has been linked to lower levels of psychopathology and enhanced well-being. This study examined whether two distinct features of self-compassion (self-warmth and self-coldness) mediate the relationship between: 1) attachment anxiety and depression; 2) attachment avoidance and depression; 3) attachment anxiety and quality of life; 4) attachment avoidance and quality of life.

Methods: Participants ($N = 2,253$; 53.4% female, $M_{age} = 50$ years) from a German general population sample completed the Self-Compassion Scale (SCS), Adult Attachment Scale (AAS), Beck Depression Inventory-Fast Screen (BDI-FS), and European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30). Parallel mediation using PROCESS for SPSS examined whether insecure attachment (anxiety and avoidance) predicted increased symptoms of depression and decreased quality of life through self-warmth and self-coldness in four separate models.

Results: **MODEL 1:** Attachment anxiety had a significant indirect effect on depressive symptoms via self-warmth (std. $\beta = .01$, 95% CI [.01, .02]) and self-coldness (std. $\beta = .17$, 95% CI [.15, .20]). The total effect of attachment anxiety on depressive symptoms was reduced from $\beta = .29$ to $\beta = .11$ ($p < .001$) when self-warmth and self-coldness were added to the model. **MODEL 2:** Attachment avoidance had a significant indirect effect on depressive symptoms via self-warmth (std. $\beta = .02$, 95% CI [.01, .03]) and self-coldness (std. $\beta = .15$, 95% CI [.13, .17]). The total effect decreased from $\beta = .28$ to $\beta = .11$ ($p < .001$) when mediators were added to the model. **MODEL 3:** Attachment anxiety had a significant indirect effect via self-coldness (std. $\beta = -.11$, 95% CI [-.13, -.09]), but not self-warmth ($\beta = -.01$, 95% CI [-.01, .00]). The total effect decreased from $\beta = -.18$ to $\beta = -.07$ ($p > .001$). **MODEL 4:** Attachment avoidance had a significant indirect effect via self-coldness (std. $\beta = -.09$, 95% CI [-.11, -.07]), but not via self-warmth (std. $\beta = -.01$, CI [-.01, .00]). The total effect decreased from $\beta = -.21$ to $\beta = -.12$ ($p < .001$).

Discussion and Conclusions: Most research testing the relationship between attachment, self-compassion, psychopathology, and quality of life has used a Self-Compassion Scale total score, but did not consider the possibly differing contributions of the sub-dimensions of this construct. The indirect effects via self-warmth appear to be of negligible magnitude or non-significant, speaking against self-warmth as a mediator. Our findings suggest that self-coldness may be particularly relevant as a treatment target when addressing relational struggles, with both theoretical and clinical implications for psychotherapy and future research.

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CHRONIC STRESS, EARLY LIFE ADVERSITY AND DEPRESSIVE SYMPTOMS: THE MODERATING ROLE OF POSITIVE SOCIAL RELATIONSHIPS

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Introduction: Chronic stress is associated with risk for elevated depressive symptoms in adulthood. Exposure to early life adversity (ELA) may compound this risk. However, positive social relationships may buffer the impact of chronic stress and ELA on depressive symptoms. The goal of this study was to test whether positive social relationship may buffer the associations between chronic stress, ELA, and depressive symptoms. **Methodology:** This cross-sectional study included 168 partnered middle-aged mothers of either an adolescent with an autism spectrum disorder or intellectual disability, the chronic caregiving group ($n = 94$), or with a typically-developing adolescent, the comparison group ($n = 74$). ELA was assessed using the Childhood Trauma Questionnaire. Depressive symptoms was assessed using the Center for Epidemiologic Studies Depression. Participants also completed a daily diary to assess daily feelings of joy experienced across several social relationships (their child, partner, family, friends and coworkers) for 6 consecutive days. An averaged measure of the daily relationship joy was computed from the diary data. A moderation analysis tested the three-way interaction among chronic stress, ELA, and relationship joy when predicting current depressive symptoms.

Results: The three-way interaction was statistically significant ($F(1, 160) = 9.70$, $p < .01$, $R^2 = .047$). Participants with the highest depressive symptoms where chronically stressed mothers who reported greater ELA exposure and lower daily relationship joy, while participants with the lowest depressive symptoms were mothers of typically developing adolescents who reported low ELA and higher daily relationship joy. Simple slopes analysis indicated that daily relationship joy attenuated the association between ELA and depressive symptoms of mothers under chronic parenting stress ($F(1, 160) = 9.21$, $p < .01$) but not for mothers raising a typically-developing adolescent ($F(1, 160) = 1.72$, $p < .19$). The results remained significant after controlling for socioeconomic status and marital satisfaction.

Conclusion: Positive emotions elicited by social interactions moderated the associations among chronic stress, ELA and depressive symptoms. Although longitudinal studies are needed to disentangle the directionality of these associations, these findings suggest a potential mechanism underlying the stress buffering effects of social support.

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EFFECTS OF RESISTANCE TRAINING ON DEPRESSION AND CARDIOVASCULAR DISEASE RISK IN BLACK MEN

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Background: Depression is underrecognized and undertreated in Black men. Depression also contributes to cardiovascular disease (CVD), and Black men have the highest rate of mortality from CVD. Resistance training (RT; i.e., weight lifting) can have beneficial effects on depression and CVD.

Method: Fifty Black men with clinical symptoms of depression were randomized into 12 weeks of RT or an attention-control group. Behavioral Activation techniques were used to support adherence to the RT. Both groups met twice/week during the intervention, and follow-up assessments were done at end-of-treatment (EOT) and 3 months later. Depression was assessed with the interview-administered Quick Inventory of Depression Symptomology (QIDS). CVD risk variables included body composition, blood pressure, cholesterol, and high-sensitivity C-reactive protein (HS-CRP). As this was a pilot trial, we focus on effect sizes rather than statistical significance.

Results: Using a series of longitudinal mixed effects models with subject specific intercepts, associations between condition and primary (QIDS) and secondary (CVD risk variables) outcomes were examined. Models adjusted standard errors for clustering of repeated responses within participant. The analysis was restricted to those with at least one follow-up assessment (n=38). There were medium sized effects indicating lower mean QIDS scores for the RT group at EOT ($b=-1.89$, 95% CI: -4.26-.04, $f^2=.14$) and 3-month follow-up ($b=-1.90$, 95% CI: -5.61-0.81, $f^2=.15$). Mean reductions in QIDS score from baseline to EOT was 6.24 points (SD=4.33) for the RT group vs. 3.24 (SD=3.80) for control. At the 3-month follow-up, mean reductions were 4.38 (SD=6.19) for RT participants vs. 1.75 (SD=4.27) for the control. There was a medium sized effect indicating lower body fat in RT vs. control at the EOT ($b=-.71$, 95% CI: -2.37-.95), but not at the 3-month follow-up. There was no indication of differences between groups in blood pressure, cholesterol, or HS-CRP.

Conclusion: The high disease burden of depression and CVD, along with the persistent barriers to care facing Black men warrant the development of novel interventions for depression for these men. The results of this study suggest that RT is feasible and may be effective for reducing depression and CVD risk in this population. A future, fully powered study is needed.

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IMPACT OF AN ADULT ADHD TOOLKIT UTILIZED IN A PRACTICE SETTING

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Introduction: Approximately 5% of the US adult population has Adult ADHD, which has negative impacts on quality of life. The diagnostic features of ADHD in adults and management strategies differ from pediatric ADHD. Healthcare professionals report a need to increase their knowledge of the disorder and confidence in diagnosis and management of ADHD in adults through education, tools and resources. To address this need, the American Academy of Family Physicians National Research Network (AAFP NRN) collaborated with a panel of experts to create a web-based Adult ADHD Toolkit composed of information, content, and tools to aid in the diagnosis, management and treatment of adults with ADHD.

Objectives: To assess the impact of utilizing an Adult ADHD Toolkit in a practice setting.

Methods: Primary and behavioral healthcare professionals from AAFP NRN practices (n=6) used the Adult ADHD Toolkit for 17 weeks. Data on Toolkit use, usefulness, implementation, impact, and changes in ADHD-related knowledge, confidence and practice were collected via pre-post and weekly surveys and end of study interviews. Mixed method approach was used to analyze data. Time series and regression analyses were used to track the change in use/implementation of the Adult ADHD Toolkit as well as the knowledge change between pre, mid, and post surveys.

Results: The access to and use of the Adult ADHD Toolkit had a positive longitudinal impact on provider competence and confidence related to Adult ADHD. An observable change in knowledge occurred in the content areas related to nature of ADHD, ADHD diagnosis in adults, treatment and management of ADHD in adults, and patient safety, including use of stimulants in adults. Provider reports on usability, usefulness and ease of implementation of Toolkit and perceived impact on the diagnosis, treatment, and management of adults with ADHD are favorable.

Conclusions: Adoption of the Adult ADHD Toolkit into routine care of adults with ADHD provides critical information to providers, educators, patients, and learners to expand their knowledge about Adult ADHD and provide informed care to Adult ADHD patients.

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IMPACT OF ONLINE AND OFFLINE NETWORK AND SUPPORT ON DEPRESSIVE SYMPTOMS AMONG A NETWORK OF ONLINE GAMERS

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Introduction: As video game use increases, public health professionals have been concerned with gaming's effects on mental health, citing greater risk for depressive symptoms and reduced real life social involvement. While the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders lists Internet Gaming Disorder as a condition for further study, recent studies have uncovered possible cognitive and social benefits to online gaming. Many games provide a chat function for players to extend real life relationships and make new online friendships; however, little is known about the development of online gaming friendships. One way to investigate the impact of social connection is through social network analysis.

Methods: An online gaming site was used as a bounded network, with a clear member list, to perform whole network analysis. Members of this site were asked to report demographics such as age, race, education, marital status, and employment. Depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9). Social support was measured and divided into "in-real-life" (IRL) support and online support. Members were also asked to report members of their IRL network and members of the online community with whom they spoke to about important life matters. Multi-level modeling was used to parse out variance described by demographics, IRL measures, and online measures. Linear network autocorrelation modeling was used to determine the impact network connections had on depressive symptoms while controlling for the dependent nature of network analysis.

Results: The model including IRL network measures accounted for 31% of the variance exhibited in PHQ-9 scores. Within this model, IRL support had an inverse relationship with PHQ-9 scores ($\beta = -0.46$). The model including online network measures significantly explained 50% of the variance ($R^2 = .50$, $F(9,27) = 2.98$, $p = .01$), with more online connections significantly predicting PHQ-9 scores ($\beta = 0.46$). A significant network autocorrelation model included IRL support ($\beta = -2.66$), IRL connections ($\beta = 1.81$), online support ($\beta = 2.40$), and network effects ($\beta = 0.06$). A significant network effect coefficient means the depressive symptoms present within a gamer's network were significantly associated with the depressive symptoms of the gamer.

Conclusions: Both online and IRL network and social support measures accounted for significant variance in PHQ-9 scores in this network. Members with more depressive symptoms may be seeking help through online channels. In this sample, the support felt from online and IRL sources had inverse associations with depressive symptom scores which may imply differences in use and utility of these types of support.

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EMOTIONAL EATING ASSESSED RETROSPECTIVELY VS. PROSPECTIVELY: DISTINCT IMPLICATIONS FOR WEIGHT LOSS

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Emotional eating (eating in response to negative emotions) has been proposed as a key driver of overeating leading to difficulties with weight maintenance and has been shown to predict weight loss outcomes. Typically, it is assessed via retrospective self-report measures. Yet, emotional eating is an inherently temporal construct, with elevated negative emotions proposed to predict subsequent eating. Little is known about the accuracy of retrospective emotional eating measures. We aimed to assess this by examining the degree to which a common retrospective emotional eating measure corresponded to momentary emotional eating assessed prospectively. We examined the predictive validity of these measures by examining whether they predicted percent weight loss post-intervention. As part of a behavioral weight loss intervention, participants ($N = 188$; $BMI_{Avg} = 36.91$) reported their retrospective emotional eating at baseline. For the first two weeks of the program, participants completed ecological momentary assessment (EMA) surveys assessing their emotions and dietary adherence. Using linear mixed models that controlled for average emotion levels, we examined how momentary emotions at one time point affected participants' likelihood of lapsing from their diet at the next time point. In particular, we examined momentary anxiety/stress, sadness, loneliness, and the average of these emotions. Then, we created person-specific indices of momentary emotional eating from the standardized residual values. We found a significant, small positive association between retrospective and momentary emotional eating due to loneliness ($r = .23$, $p = .002$), but not due to other emotions ($r_s < .13$). Next, we examined how emotional eating affected percent weight loss post-intervention. Emotional eating assessed retrospectively had near-zero associations with weight loss ($\beta_s < .08$). On the other hand, eating following momentary sadness predicted *less* weight loss ($\beta = -.15$, $p = .04$), and eating following momentary loneliness predicted *more* weight loss ($\beta = .26$, $p < .001$). All other associations were near zero ($\beta_s < .10$). Our results indicate that retrospective and momentary emotional eating have some, but minimal, concordance with one another. Future work would benefit from examining what constructs these measures truly assess, and why self-reported dietary lapses following different emotions (e.g. loneliness vs. sadness) have different effects on weight loss outcomes.

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ENGAGEMENT IN THE TEMPORAL INFLUENCES ON MOVEMENT AND EXERCISE (TIME) STUDY PILOT

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The attainment of recommended levels of physical activity and sleep and limiting sedentary time deteriorates in emerging adulthood. While interventions promoting these behaviors are typically successful, information is lacking on the different mechanisms explaining why people adopt versus maintain positive health behaviors. The Temporal Influences on Movement and Exercise (TIME) Study will use real-time mobile and wearable technologies to collect intensive longitudinal data (ILD) to identify time-varying factors that predict within-subject variation in behavioral “episodes” (e.g., ≥ 10 min of physical activity, ≥ 120 min sedentary time, ≥ 7 hr sleep) and “lapses” (i.e., not attaining recommended levels for ≥ 7 days) during the adoption and maintenance phases.

TIME is a prospective within-subject case-cross-over observational study across a 12-month period with emerging adults (ages 18–24, $N=250$). Using ecological momentary assessment (EMA), self reports of reflective factors (e.g., intentions, planning, goal-setting) will be collected while reactive variables (e.g., locations, social contexts, phone/app use) and behaviors (i.e., physical activity, sedentary behavior, sleep) will be continuously and passively collected using built-in sensors of smartphones and smartwatches. With long-term ILD studies, sustaining participant engagement in real-time assessment procedures can be challenging given the potential for burden and disinterest. To track and monitor participant engagement in the TIME study, a variety of measures are being collected passively (e.g. device notification state, EMA completion time, device use), through self report (e.g. daily stress, travel), at baseline (e.g. occupation, personality), at study completion (e.g., perceived burden, system usability, perception of interruption), and by study staff (e.g., reasons for participant contact, length of contact). Microinteraction-EMA single-question assessments delivered on the smartwatch are also being used as a viable alternative to obtain high-temporal-density data with low burden when full EMA is not used. Based on pilot study data being used to refine the study design, descriptive statistics on a subset of possibly predictive engagement metrics will be presented. Barriers to engagement identified in the pilot study via quantitative data analysis and qualitative feedback ($n=30$) and how we adjusted procedures with the intent of overcoming barriers to engagement in the main trial will be addressed.

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FEASIBILITY AND ACCEPTABILITY OF BLOOD SPOT COLLECTION AMONG UROLOGICAL CANCER SURVIVORS AND THEIR PARTNERS

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Measuring biomarkers alongside patient reported outcomes (PROs) can elucidate pathways by which behavioral and psychosocial factors affect health. Biomarkers have traditionally been collected via venipuncture, a relatively invasive procedure that must be performed by a phlebotomist and requires prompt lab access. In comparison, blood spot collection on filter paper from a finger prick is a non-invasive, safe, and effective alternative. In the present study, we examined the feasibility and acceptability of longitudinal blood spot collection.

The present study is a secondary analysis of data collected from urologic cancer survivors and their partners. Blood spots and PROs were collected by a research assistant at baseline, 8 weeks, and 6 months. Participants also completed acceptability survey regarding blood spot collection at 6 months. We hypothesized that $>90\%$ of participants would provide usable blood spots at baseline, and that there would be no difference between PRO and blood spot collection rates. In addition, we expected that the majority of participants would not find the procedure difficult, experience only slight or no discomfort, and be willing to undergo a similar procedure in future studies. Finally, we explored the concurrent associations between reported level of discomfort and PROs of anxiety, depression, and positive affect.

The majority of participants ($N=119$) were cancer survivors (65.5%), married (80.7%), Caucasian (87.4%), and male (59.5%). At baseline, 95.8% of participants provided usable blood spots. Paired samples t-tests indicated no significant differences between collection rates of PROs and blood spots (Baseline: $t(118)=-1.42, p=0.158$; 8 weeks: $t(118)=-1.00, p=0.319$; 6 months: $t(118)=0.82, p=0.417$). The majority of survey respondents found the procedure not difficult at all (71.2%). In addition, most participants indicated that collection and resulted in no (42.5%) or slight (41.1%) discomfort, and 94.5% of respondents indicated that they would be willing to undergo a similar procedure in future studies. Logistic regression revealed marginally significant concurrent associations between level of discomfort and depression ($\beta=0.06, p=0.056$) and positive affect ($\beta=-0.07, p=0.052$), indicating that affective symptoms may be associated with increased discomfort. Overall, these findings support the feasibility and acceptability of blood spot collection via finger prick to obtain biomarkers for psychosocial and behavioral research.

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FEASIBILITY OF USING FOOD IMAGES AND CROWDSOURCING TO CAPTURE REAL-TIME EATING BEHAVIORS

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Background: Using mobile devices to assess health behaviors in real time (e.g., ecological momentary assessments, EMA) is increasingly popular, but documenting eating behaviors remains a challenge. Most EMA studies use checklists, but these are rarely comprehensive and self-assessment may influence eating behaviors.

Objective: To examine the feasibility of using smartphone-captured images to document real-time eating behaviors.

Methods: Participants (n=48) took pictures of their meals and snacks for one week using a commercially available smartphone application as part of an EMA study. Prior to this data collection, participants completed the Block Fat/Sugar/Fruit/Vegetable Screener to assess their usual eating behaviors. After data collection, participants were surveyed about their experiences. The study team uploaded images to Amazon's Mechanical Turk (mTurk), a crowdsourcing distributed human intelligence platform. mTurk workers were instructed to assign a count of fruits, vegetables, salty snacks, or sweet snacks to the images. Two workers assessed each image, and their responses were compared. When answers were discordant, a study team member assigned the final count. T-tests compared image-derived weekly food counts to the participant-reported number of days per week food items are usually eaten.

Results: Most participants (88%) remembered to take pictures of their meals and snacks at least half of the time or better. Few reported difficulties uploading pictures (18% agree or strongly agree). Only 4.2% reported substantial behavior change from taking pictures of their food. mTurk worker coding of food items were highly concordant: 85.4% for fruits, 67.9% vegetables, 83.2% salty snacks, and 81.4% sweet snacks. There were no significant differences between mTurk counts and self-reported weekly intake for any food categories (fruit [mean from image and screener, respectively=3.58, 3.59; p=0.9880], vegetables [mean=9.96, 10.62; p=0.5419], salty snacks [mean=4.17, 3.79; p=0.5632], and sweet snacks [mean=3.77, 4.54; p=0.3674]).

Conclusions: The feasibility of using participant-captured images and mTurk crowdsourcing technology to measure eating behaviors was studied. The method was generally well-accepted and executed by participants, and the images were accurately assessed by mTurk workers. This method offers a potential time-efficient and cost-effective strategy for capturing eating behaviors in real time.

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RECRUITMENT OF HEAD AND NECK CANCER PATIENTS IN SMOKING RESEARCH IN RURAL APPALACHIA: CONSIDERATIONS AND CHALLENGES

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The advancement of patient-centered cancer care requires clinical research. Unfortunately, clinical research can be inhibited by recruitment and enrollment issues. These challenges are particularly evident while studying head and neck cancer patients with a history of cigarette smoking in rural Southwest Virginia, a region featuring a predominantly white population marked by low education and income and a high rate of smoking (25%-30% of the general population). This population is challenging to enroll in clinical research due to poor access to healthcare, low socioeconomic status, lack of familiarity with research, and discomfort discussing smoking status. Sharing these challenges may be of particular benefit to the research community given the potential to provide a platform where common challenges may be discussed and resolved. Here, we highlight challenges associated with recruitment of head and neck cancer patients who are current or former cigarette smokers in an ongoing observational research study examining predictors of smoking cessation. We do so in order to identify common recruitment-related issues with the intent of developing solutions to overcome these issues. Various recruitment modalities are being employed in an effort to enroll 100 patients who were treated for head and neck cancer with curative intent in the past 5 years and were smokers at the time of diagnosis. Over 24 months, a total of 100 patients were identified as eligible and invited to participate. However, only 36 have enrolled, despite \$20-100 compensation, study visits being brief (~30 minutes) and scheduled to coincide with regularly scheduled clinical appointments. Of the patients enrolled, only five patients (13.89%) have stopped smoking follow diagnosis of head and neck cancer, compared to successful smoking cessation in 50-60% of head and neck cancer patients in prior literature outside of rural Virginia. Overall, average age of first cigarette use is 13.6 (±4.8). Patients report low income (>90% make less than \$29,000/year), limited education (< 17% have a college education), and are predominantly male (65%) and white (>90%). Challenges associated with recruiting head and neck cancer patients with a history of tobacco use from rural Southwest Virginia limits what is known about smoking cessation in this population. Ongoing recruitment efforts and solutions for mitigating these challenges will be discussed.

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DOES ASSESSMENT ALTER RESPONSES? AN EXAMINATION OF REACTIVITY IN AN ECOLOGICAL MOMENTARY ASSESSMENT OF BODY COMPARISONS

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Body comparisons, or comparing one's body to that of another, are common among women, and can shape how they feel about their bodies. Previous research has used ecological momentary assessment (EMA) to capture body comparisons as they occur in daily life; however, the act of completing EMA could also potentially alter the natural occurrence of these comparisons and associated phenomena. The present study examined the reactivity of assessing body comparisons by comparing the results of related constructs (e.g., body dissatisfaction, mood) on days participants received body comparison EMA items to days they did not receive these items. Undergraduate women ($N = 75$, ages 18–25) completed surveys four times daily for 11 days via a smartphone survey app. The surveys during the first four days included items assessing body dissatisfaction, mood, and daily activities. The surveys during the last seven days included the same items in addition to items assessing body comparisons (although all surveys were balanced to ensure similar length). Pre- and post-EMA measures of trait-level body dissatisfaction, appearance comparison tendency, disordered eating, and depression were also collected. Multilevel analyses revealed that assessments of body dissatisfaction and mood did not significantly change when participants received body comparison items ($ps > .05$). However, during the days they did receive body comparison items, they reported fewer occasions of watching tv ($p = .022$), internet use ($p = .006$), and social media use ($p = .031$). Paired sample t-tests showed participants' trait-level body dissatisfaction, appearance comparison tendency, and disordered eating were significantly lower at the post-EMA assessment than at the pre-EMA assessment ($ps < .01$). No significant difference in depression symptoms between pre and post were found ($p = .550$). Although assessing body comparisons did not alter participants' reports of constructs that are commonly studied with these comparisons (i.e., momentary body dissatisfaction and mood), findings suggest some media use measures were potentially reactive to completing social comparison EMA items. Participants either engaged in media content less when reporting on their body comparisons or they experienced response fatigue and reported these behaviors less often. Given that similar results were not found for other measures and the surveys were balanced making it no less burdensome to deny a behavior, the former of the two is more likely. This reactivity to completing body comparison EMA items highlights the need for researchers to provide greater consideration to reactivity in social comparison EMA designs to prevent biased results. The reductions found in trait-level measures also suggest there may be utility in using EMA in body dissatisfaction interventions.

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PSYCHOMETRIC VALIDATION OF CHINESE VERSION OF THE FIVE FACET MINDFULNESS QUESTIONNAIRE IN CHINESE COLORECTAL CANCER PATIENTS

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Introduction: Mindfulness has emerged as an important correlate of well-being in various clinical populations including cancer patients. The Five Facet Mindfulness Questionnaire (FFMQ) is a widely used 39-item instrument to assess five facets of mindfulness. The present study evaluates the psychometric properties of its 20-item short version (FFMQ-SF) in the Chinese context.

Research Design: This study was based on a clinical sample of 127 Chinese colorectal cancer patients. Factorial validity was assessed using exploratory factor analysis and Bayesian structural equation modeling with zero-mean small variance informative priors on cross-loadings and residual covariances. Convergent validity was examined by regressing physical and mental health measures on the FFMQ-SF facets.

Results: The five-factor structure with approximate zero cross-loadings provided an acceptable fit (PP limits = -3.3 to 114.3, PPP = 0.038, PPPP = 0.701) to the data with satisfactory reliability ($\alpha = 0.69$ to 0.85). Out of the five facets, acting with awareness consistently predicted lower levels of perceived stress, negative affect, anxiety, depression and illness symptoms ($\beta = -0.35$ to -0.41 , $p < .05$) and better quality of life ($\beta = 0.27$ to 0.31 , $p < .05$). Interestingly, this facet was not significantly associated ($r = 0.03$ to 0.17 , $p > 0.05$) with the other facets.

Conclusions: The present findings provide support to the factorial validity and reliability of the FFMQ-SF as a precise assessment of different facets of mindfulness. Further studies are needed to elucidate the convergent validity of the FFMQ-SF in other contexts.

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EXPERIENCE SAMPLING METHODOLOGY: A VALID APPROACH FOR ASSESSING SOCIAL CONTEXT AND YOUTH PA

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Social factors have been identified as key predictors of youth physical activity (PA), and an important avenue for research aiming to promote PA. Research is needed to determine appropriate methods for measuring ecologically valid relationships between the social context of PA and PA behavior. The objective of this study was to validate experience sampling methodology (ESM) as an appropriate method for measuring PA and PA social context, particularly assessing the influence of social context on youth PA. Young adolescents (12-14 yo) wore accelerometers while simultaneously completing seven days of ESM. Across the nine participants, this approach resulted in 550 data points for assessing the social context, as well as validating ESM through estimates of metabolic equivalent (MET). Both methodologies yielded similar conclusions with regard to the influence of social context on youth PA. Youth were more physically active in the presence of peers and friends than when alone or when in the presence of family members. Accelerometry and ESM also yielded similar conclusions for MET. However, the difference in METs between the two methods became greater ($\beta = 0.96$, $p < .0001$) as the MET values increased. Specifically, for higher intensity activities, METs estimated from ESM were greater than METs estimated from accelerometry. ESM produces similar conclusions as accelerometry when assessing the social context of youth PA. Specifically, findings provided further support for the importance of peers and friends for youth PA. However, differences exist between ESM and accelerometry when assessing higher intensity activities.

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SLEEP HEALTH AND PERFORMANCE PROGRAMMING FOR AIR FORCE ROTC

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Introduction: Sleep disturbance is the number one non-injury related medical concern reported by service members post-deployment, and military populations report poor sleep duration in general compared to civilians. Poor sleep quality has been observed in college student populations, and sleep disturbance is a significant risk factor for many physical and mental health conditions. Air Force ROTC cadets function as both college students and trainees for future military leadership positions. The responsibilities associated with these roles and campus environment may be risk factors for poor sleep, and place AFROTC cadets at risk for suboptimal performance when entering the operational Air Force and future health conditions. A sleep health and performance briefing for the Performance Improvement and Leadership for Officers in Training (PILOT) Program was developed to inform AFROTC cadets about the importance of healthy sleep and the effects of poor sleep, assess the sleep quality of AFROTC cadets, and to provide evidence-based and culturally sensitive strategies for improving sleep health.

Methods: Forty-six AFROTC cadets engaged in a 1-hour briefing focused on sleep health and performance. Sleep knowledge was assessed pre- and post-briefing. The Pittsburgh Sleep Quality Index (PSQI) was administered prior to the briefing and at one-month follow-up ($n = 13$). Satisfaction and applicability were also assessed.

Results: Prior to the briefing, cadets reported sleeping an average of 6.79 hours per night, with only 51% sleeping 7 or more hours and 13% sleeping < 6 hours per night. The PSQI composite score indicated that 81% of cadets experience poor sleep quality, though only 38% perceived poor sleep quality. Ratings of sleep quality and sleep time did not change significantly at one-month follow-up. However, cadets demonstrated improved knowledge about sleep health in performance and 80.4% reported being highly satisfied with the educational briefing.

Discussion: Overall, AFROTC cadets reported poor sleep quality and behaviors that are comparable to other college student samples. The PILOT program briefing resulted in increased sleep health knowledge amongst AFROTC cadets; however, sleep behavior did not appear to improve following this brief educational intervention. Additional follow-up, assessing other metrics such as readiness to change sleep, and including interventions such as self-monitoring should be tested in future iterations.

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WHOLE HEALTH FOR WOMEN VETERANS WITH MENTAL HEALTH CONDITIONS: A NEEDS ASSESSMENT OF PATIENT PREFERENCES FOR WELLNESS SERVICES

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The Veterans Health Administration (VHA) is undergoing a transformational shift, from disease-focused care to a Whole Health System that emphasizes physical, mental, emotional, and spiritual health and well-being among all Veterans. Wellness services for women Veterans vary widely across the VHA system, without consensus on the need for, or organization of, specialized services for women Veterans with mental health conditions. Understanding needs and priorities of women Veterans is essential to guide the implementation of patient-centered behavioral health services. A multi-disciplinary work group comprising exercise and health promotion experts, chaplaincy services, and clinicians from behavioral health, women's health primary care, and rehabilitation initiated a quality improvement project to assess patient needs and preferences for whole health services. A survey was distributed to a convenience sample of women Veterans using the Women's Health-Mental Health Clinic at the Durham VA Medical Center. We asked patients to rank their priorities for wellness across a wide range of services, and to indicate their preference for the location (e.g., VA facilities, community, home-based) and format (e.g., women-only, mixed gender groups) that these programs be delivered. 107 women Veterans 18-65+ years old (65.3% African American; 5.9% LatinX) completed the survey. Over 50% of patients ranked relationships, physical activity, sleep/nightmares, pain management, anger, or spiritual/moral pain as top wellness priorities. Patient preferences for where and how wellness services be delivered differed by wellness domain. On average, patients ranked main VA facility (55%), community-based non-VA facilities (39%), and community-based VA facilities (33%) as preferred locations for whole health services; fewer patients endorsed home-based programs with: video stream (19%), apps or website (12%), or telephone counseling (6%). Relative to group format, 4% of patients endorsed mixed-gender groups; 44% indicated no preference and 52% indicated preference for women-only groups. In this sample of women Veterans with mental health conditions, schedule conflicts, travel difficulties, and psychological barriers were most commonly reported barriers to participating in these programs. The results from this quality improvement project highlight considerations for tailoring the content and (trauma-informed) delivery of Whole Health services for women Veterans with mental health conditions.

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TBI AND CHRONIC MULTISYMPTOM ILLNESS AMONG GULF WAR VETERANS: A CALL FOR BETTER IDENTIFICATION

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Background: Traumatic Brain Injury (TBI) was once considered rare among veterans who served in the 1990-1991 Gulf War. However, recent research suggests high rates of service-related TBI among this cohort, with estimates from 12.2%-68.6%. While the Department of Veterans Affairs mandated TBI screenings for all returning veterans in 2007, those who sustained a TBI during the first Gulf War may remain under-identified and undiagnosed. Documentation of TBI is important given recent findings showing a relationship between TBI and chronic multisymptom illness (CMI). CMI is a constellation of disabling, medically unexplained physical symptoms common among Gulf War veterans. The current study aimed to 1) compare rates of self-reported TBI with documented TBI-related diagnoses, and 2) assess the relationship between TBI and CMI symptoms among Gulf War veterans.

Methods: 268 Gulf War veterans with CMI participated in an RCT comparing Problem-Solving Treatment to Health Education. The current study analyzed self-report data from the baseline assessment and a review of TBI-related diagnoses through VA medical records. The analysis included only those participants who were enrolled in VA medical care (N=216). Participants completed the Brief Traumatic Brain Injury Screen and the Kansas Symptom Questionnaire to assess self-reported history of TBI and severity of CMI symptoms. T-tests examined the relationship between TBI and severity of CMI symptoms.

Results: 74.2% of participants screened positive for a history of TBI. However, only 10.6% had a TBI-related diagnosis documented in their VA medical record. Results showed that participants with a self-reported history of TBI had significantly more severe CMI symptoms compared to those in the non-TBI group ($t(211) = 4.20, p < .001$), with a mean difference of 10.28 points (95% CI: 5.46, 15.10) on the Kansas Symptom Questionnaire (range 0-70).

Conclusion: These results confirm previously reported high rates of TBI among Gulf War veterans, and highlight the gap between self-reported history of TBI and TBI-related documentation within VA medical records. This gap is concerning given the finding that history of TBI is related to severity of CMI. Taken together, these findings suggest the need for greater identification of TBI among Gulf War veterans and call for further research on the relationship between TBI and the longitudinal progression of CMI symptoms. Limitations include the study's cross-sectional design.

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DOES A FORMATION OF PHYSICAL ACTIVITY PLANS DECREASE THE TIME SPENT ON SEDENTARY BEHAVIOR? PRELIMINARY FINDINGS

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Background: Individual planning is an effective self-regulation strategy for supporting people in their efforts to translate goal intentions into behavior change. Dyadic and collaborative planning extends individual action planning and refer to target individuals forming plans together with a partner. Physical activity and sedentary behavior are interlinked, i.e., time spent on physical activity may replace time spent on alternative behaviors, such as sedentary behavior. Additionally, planning to avoid a given behavior (e.g., sitting to watch a movie) is less effective strategy than planning to engage in alternative behaviors (e.g., engaging in physical activity). The main aim of the study was to evaluate whether forming individual, dyadic, and collaborative physical activity plans may reduce the time spent on sedentary behavior.

Methods: Study sample consisted of 297 patient-partner dyads ($N = 594$, aged 18-90 years old). Participants were randomly assigned to one of four conditions: Active control (education only, no planning) or three experimental groups (individual planning, dyadic planning or collaborative planning). All dyads participated in a physical activity and sedentary behavior education session, delivered after the baseline measurement. The time spent on sedentary behavior, measured by International Physical Activity Questionnaire, was the main outcome (self-reported at the baseline [Time 1, T1] and at a 10-week follow-up [Time 2, T2]).

Findings: Preliminary analyses showed a significant effect of time: The level of sedentary behavior decreased between T1 and T2; the decrease was observed consistently, across the four experimental conditions. There was no significant time x group interaction, indicating a lack of significant effects of experimental conditions. Sensitivity analysis conducted with age, gender, and the role in the dyad (patient/partner) as covariates showed a similar pattern of findings. Age formed a significant interaction with time, with a larger reduction of sedentary time found in older participants.

Discussion: Results showed a lack of effects of forming physical activity plans on sedentary behavior. The effect of time may result from education regarding physical activity and sedentary behavior, delivered after T1 measurement to all participants. Further studies may need to clarify if other types of planning (e.g., planning to engage in active breaks) may be useful to reduce sedentary behavior.

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CROWDSOURCING BEHAVIORAL AND SOCIAL SCIENCE RESEARCH ACCOMPLISHMENTS THAT HAVE IMPROVED PUBLIC HEALTH

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The Office of Behavioral and Social Sciences Research (OBSSR) at the National Institutes of Health (NIH) launched a crowdsourcing effort to generate an extensive and diverse list of behavioral and social sciences research accomplishments that have led to improved health. The behavioral and social sciences research community submitted their ideas on what they considered to be impactful accomplishments in the field and interacted and voted on others' ideas. These accomplishments were not limited to NIH funded research and submitters were encouraged to share a broad array of ideas. Approximately 200 submissions were posted to the crowdsourcing platform which were vetted by an expert panel of social and behavioral scientists at the NIH. We would like to share some examples that rose to the top from this crowdsourcing effort with the SBM community. We would like to raise awareness of this effort as OBSSR plans to regularly crowd-source the social and behavioral science research community going forward in order to keep the list of behavioral and social sciences research accomplishments current. A poster session will also allow us to learn from conversations with the SBM attendees and modify future efforts to include their feedback.

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COUNTING AND RECEIVING GOAL-SETTING INSTRUCTIONS: EFFECTIVENESS IN IMPROVING VEGETABLE INTAKE AMONG COLLEGE STUDENTS

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Background: Given the role of diet in affecting health, it is essential to identify effective approaches such as self-monitoring and goal setting to help individuals improve their eating behaviors. Previous dietary interventions among college students used self-monitoring and goal setting minimally, most of them did not employ an experimental design and were not mobile. Mobile interventions to improve eating behaviors are easily accessible, convenient to use and can reach a wider range of individuals.

Objective: To assess whether a mobile intervention that consisted of self-monitoring (i.e., daily counting of red/orange vegetables consumed that day) followed by goal setting (i.e., instructions to set a goal to eat more the next day) improved red/orange vegetable intake among undergraduate students.

Methods: This study used a two-group pre-posttest experimental design (N=165). Participants were undergraduates living in dorms at a large Midwestern university. After completing a background survey, participants uploaded photos of meals from their smartphones and provided descriptions of the meals to an online platform for three days [Monday, Tuesday, Wednesday]. In addition, those in the intervention group (N=85) were asked to use a checklist to count the number of times they ate red/orange vegetables and to set a goal to eat them one more time, the next day. The dependent variable was a measure of eating behavior—the average of two raters' estimate of red/orange vegetable intake on that day based on review of uploaded photos and descriptions. The unit of the behavior variable was frequency (number of times/day). Generalized Estimating Equations (GEE) with robust variance estimation assessed the group by time interaction on red/orange vegetable intake.

Results: GEE analysis yielded statistically significant group by time interactions for Tuesday (time 2) ($\beta=0.77$, $p<0.01$) and for Wednesday (time 3) ($\beta=0.55$, $p<0.01$). For the intervention group, mean frequency intake increased from 0.93 times per day on Monday to 1.56 on Tuesday and 1.32 on Wednesday; whereas for the control group, mean intake was 0.97, 0.82 and 0.79.

Conclusions: Those in the intervention group, who used the checklist to count their vegetable consumption and set a goal to eat one more the next day, improved their vegetable intake. This novel mobile photo method for counting followed by goal setting, is a potential strategy for behavior change among undergraduate students during their formative years. Further research is needed on whether counting followed by goal setting in mobile interventions is effective in sustaining long-term behavior change among undergraduates.

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DOES A TAILORED WEIGHT MANAGEMENT INTERVENTION PROGRAM IN THE WORKPLACE WORK?

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Background: Research has confirmed that workplace health promotion has both economic and non-economic benefits for enterprises. Obesity is a severe health threat and affects work efficiency and overall corporate productivity. The prevalence rate of overweight and obesity in Taiwan reached 43% in 2016, the highest among Asia countries. Presently, weight management programs in Taiwan and other countries are mostly group-oriented, and they have failed to achieve the expected outcomes for those who have poor adherence and those who have low intention to overcome barriers. Research suggested that a tailored and individualized health promotion program in the workplace may be effective for behavioral changes and health outcomes.

Methods: This research employs a quasi-experimental design to assess the effectiveness of a weight management program in the workplace. Subjects in the experimental group participated in a program with dynamic tailoring for a period of eight weeks. Drawing on the trans-theoretical model, the program used motivational interviews, self-management, goal setting, and social support to help participants build a positive belief, adopt a healthful lifestyle, and achieve their goals. The control group received general health information routinely provided by the company. The participants were followed up and their BMI, body fat, and waistline were measured in one and five weeks after program implementation. Other measurements such as dietary behavior, physical activity, self-efficacy towards healthy diet and exercise, stages of changes on weight management behavior, weight control belief were measured in one week after the program implementation.

Findings: Results showed significant improvement in the experimental group's dietary behavior, self-efficacy, stages of behavioral changes, weight control belief, BMI, body fat, and waistline before and after the workplace intervention. In one week after the program implementation, we only observed significant difference in dietary behavior, stages of behavioral changes, weight control belief, and BMI. Five weeks later, significant difference between the experimental and control groups was observed on BMI, body fat, and waistline.

Implications for D&I Research: This research suggests individualized, tailored-made intervention in the workplace is effective for weight management. The intervention may work better than generic health promotion strategies targeting in improving high-risk groups in workplaces.

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EXPLORING THE ASSOCIATION BETWEEN SOCIAL SUPPORT AND WEIGHT LOSS AMONG LATINA AND NON-HISPANIC WHITE BREAST CANCER SURVIVORS

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Background: Breast cancer survivors are at high risk for weight gain. Relative to non-Hispanic whites (NHW), Latinas have a higher rate of obesity. Furthermore, among survivors, obesity can be exacerbated by and contribute to high levels of symptom burden. This in turn is linked to an increased risk of morbidity and mortality. While it is imperative to develop interventions that assist breast cancer survivors in managing their weight, it is also vital to understand the factors that impact survivors' ability to maintain health-promoting behaviors. Such factors may include social influences. These influences, such as social support and persuasion, may be positive. Other interactions may be negative and include sabotage and pressure. The study of the influence of these factors on health has produced mixed findings, and further research is warranted.

Methods: Forty-eight female breast cancer survivors (24 Latinas and 24 NHW) were enrolled in *Mi Salud, Mi Vida*, a 12-week mobile-health weight loss intervention. The control group received a self-monitoring app, while the intervention group received an app containing both self-monitoring and personalized feedback for self-discovery. At baseline and 12 weeks, participants completed surveys pertaining to the types of social influence they were currently experiencing.

Results: The mean age was 52 years and the average time since cancer diagnosis was 8 years. At time 1, Latinas experienced significantly greater persuasion ($p = .007$), pressure ($p < .001$), and encouragement for healthy eating ($p = .02$), and a greater trend towards discouragement from healthy eating ($p = .06$) than did NHW. At time 2, Latinas experienced greater persuasion ($p = .04$) than did NHW. Linear regression showed that among whites, increased social support was associated with decreased BMI ($b = -.65$; $p = .002$), even when the intervention was controlled for ($b = -.64$; $p = .003$). Among Latinas, a trend between undermining and greater BMI was seen ($b = .27$; $p = .08$), however, this association was explained by the intervention.

Discussion: Findings suggest that among NHW, social support may promote weight loss. While Latinas experienced greater amounts of social influence at each time point, this was not associated with weight change. A limitation of this pilot study was sample size, however, its findings suggest that future interventions may benefit from leveraging social influences.

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DEVICE-MEASURED WEIGHT LOSS AND TRACKING OF PHYSICAL ACTIVITY, WEIGHT, AND FOOD INTAKE AMONG OVERWEIGHT AND OBESE INDIVIDUALS

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Self-monitoring of health-related behaviors is a strategy emphasized by numerous behavior change theories. Self-monitoring physical activity, weight fluctuations, and eating behaviors are widely prescribed and are generally associated with weight loss. However, the majority of existing studies have analyzed self-reported data, and there is little research concerning how these self-monitoring behaviors may interact with one another to influence weight loss among overweight and obese individuals.

We conducted secondary data analysis on data from two waves (2018 and 2019) of a 6 month weight loss intervention for overweight and obese school district employees. Participants received a Fitbit wireless physical tracker and a Wi-Fi-enabled weight scale, and were encouraged to self-monitor their physical activity, weight, and food intake in the Fitbit mobile app. We conducted non-parametric missing data imputation and multiple linear regression ($N=189$) to evaluate the associations of device-measured weight loss with the percentage of days over the study period that participants 1) wore the physical activity device, 2) used the wireless scale, and 3) logged at least 800 calories of food. All analyses adjusted for age, race/ethnicity, gender, education, and marital status.

On average, participants wore the Fitbit device 68.8% of days ($sd=23.9$), weighed themselves 40.2% of days ($sd=22.8$), and logged food 18.9% of days ($sd=21.5$) over the 6 month intervention. Weighing ($p < .001$) and food logging frequency ($p=.002$) were associated with weight loss, but Fitbit wear was not. There was an interaction such that food logging was associated with increased weight loss among participants who weighed themselves less frequently ($p=.004$). There was no interaction between Fitbit wear and weighing or food logging frequency. Fitbit wear was associated with weight loss among older individuals, and weight gain among younger individuals ($p=.020$). There was no evidence of moderation of self-monitoring behaviors by age, gender, education, or marital status.

Results support the primacy of consistent self-monitoring of weight for weight loss. Food logging may be particularly helpful for individuals who are less likely to adhere to consistent self-monitoring of weight. Physical activity trackers may be more readily adopted, but their use is less clearly linked to weight loss. Weight loss interventions may be best served by prioritizing consistent self-monitoring of weight.

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CLINICALLY SIGNIFICANT WEIGHT LOSS & DECREASED BLOOD PRESSURE & HBA1C FOUND IN INTENSIVE BEHAVIORAL WEIGHT MANAGEMENT PROGRAM

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Background: The UNC Weight Management Program (WMP) is an evidence-based, financially sustainable program embedded in an academic primary care setting at The University of North Carolina at Chapel Hill Family Medicine Center (FMC). Patients with overweight and obesity are eligible to participate in WMP, primarily run by an interdisciplinary team of clinical social workers and preventive medicine residents. Based on The US Preventive Services Task Force and Medicare guidelines, WMP offers 26 Intensive Behavioral Therapy sessions per year through group and individual counseling based on the guiding principles: 1) sustainable change over rapid weight loss; 2) 5-10% weight loss; 3) setting goals and taking positive health actions; and 4) self-care.

Methods: A retrospective evaluation of WMP participants' health data was conducted. Eligible participants completed at least 4 visits and had a baseline weight, blood pressure, and hemoglobin A1c (HbA1c) recorded in the Electronic Health Record prior to their first visit. Paired t-tests were used to assess changes in weight, HbA1c and systolic and diastolic blood pressures from baseline.

Results: WMP served 673 patients over 3895 visits from September 2015 to June 2019 (47.3% white, 43.5% black, 92% non-hispanic/latino and 77.9% female). Of the patients served, 186 participants met eligibility criteria. Participants saw an average weight decrease of (9.7 lbs, $P < 0.001$) at 18 months compared to baseline, a 0.196 point absolute decrease (6.66 to 6.46, $P = 0.004$) in HbA1c at 24 months from baseline, and decreases in average systolic and diastolic blood pressure (mean difference 2.78 mm Hg, $P = 0.002$ and 1.94, $P = 0.03$, respectively) at 18 months from baseline. One third of participants ($n = 60$) achieved clinically significant weight loss of 5% or more at 18 months.

Conclusions: WMP is an intensive behavior and lifestyle change weight management program augmenting primary care providers' ability to effectively treat obesity. Participation in an evidence-based behavioral program for weight management appears to be associated with significant decreases in weight, blood pressure and blood sugar (hemoglobin A1c).

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CULTURAL TAILORING OF FAMILIAS SALUDABLES: A LATINX FAMILY-BASED, BEHAVIORAL CHILDHOOD OBESITY PREVENTION CURRICULUM

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Problem Statement: Childhood obesity continues to be an epidemic in the United States, with Latinx children disproportionately affected (Holub et al., 2013). Providing culturally and linguistically appropriate, family-based, behavioral obesity prevention programs helps to create rapport with Latinx families and could increase effectiveness (Peña et al., 2012). The *Familias Saludables* curriculum was adapted for cultural, linguistic, and age-appropriateness (middle childhood) to serve as a family-centered childhood obesity prevention treatment program.

Methods: The *Familias Saludables* curriculum adapted three curricula: the evidence-based KidShape 2.0 weight management program (base curriculum), the Sports, Play, and Active Recreation for Kids (SPARK) After School Physical Activity curriculum, and the *Sanos y Fuertes*: Healthy and Strong intervention.

Results: The curriculum content was delivered simultaneously in both languages by bilingual staff, unless participants preferred English only. Children perceived the information to be for parents if delivered in Spanish. Spanish-delivery cued parents to encourage their child(ren) to participate actively. The parent coaching component (adults only) was primarily delivered in Spanish. The SPARKS physical activity curriculum (kids only) was primarily implemented in English. Family health education, worksheets, and supplemental handouts were provided both in English and Spanish (double-sided). Images, foods, recipes, and examples provided were tailored to be culturally, linguistically, and age appropriate for our Latinx families with children 5-12 years old who live in urban environments.

Conclusion/Implications: Cultural and linguistic competence is important to address the needs and adequately serve the multicultural, multiracial, and multilingual needs of the diverse population of the United States. Tailoring of behavioral intervention curricula using an asset-based lens helps to facilitate lifestyle change because it increases relevancy to families' lives, common environmental contexts, and food preferences. A family-based approach also allows for discussion of health practices that support both heritage and current day cultural milieu.

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COPING DIFFERENTIALLY MODERATES THE ASSOCIATIONS BETWEEN WEIGHT STIGMA, DEPRESSIVE SYMPTOMS, AND QUALITY OF LIFE

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Background: Weight stigma is stressful, negatively impacting psychological and physical health. However, little research has examined strategies to help individuals who are targets of weight stigma combat its consequences. The well-established coping literature shows that approach-oriented coping has been linked to favorable health outcomes, whereas avoidance-oriented coping has been linked to poorer health outcomes. Given this, the current study tested coping as moderators of the associations between weight stigma and its known outcomes. The overarching goal of this pilot study was to provide proof of concept and choose measures for an upcoming longitudinal study of weight stigma and coping. We hypothesized that individuals who report higher approach-oriented coping and lower avoidance-oriented coping would evidence lower perceived stress, fewer depressive symptoms, and higher quality of life in relation to weight stigma.

Method: In 214 participants (87.4% female; mean BMI = 23.95) reporting experiences with weight stigma, moderation models tested the interactions between anticipated, experienced, and internalized weight stigma, three measures of emotion regulation and coping (COPE, Brief CRI, ERQ), and four health outcomes (perceived stress, depressive symptoms, psychological quality of life, and physical quality of life), controlling for BMI and gender. Given the large number of tests, we interpreted results only when a significant moderator emerged for the same measure of weight stigma and at least two health outcomes.

Results: Approach-oriented coping significantly moderated the associations between internalized weight stigma and physical and psychological quality of life [$\Delta R^2_s > .01$, $F(1, 208) > 5.15$, $ps < .024$], and disengagement coping significantly moderated the associations between internalized weight stigma and depressive symptoms and physical quality of life [$\Delta R^2_s > .01$, $F(1, 208) > 4.09$, $ps < .045$].

Conclusion: Approach-oriented and disengagement coping significantly moderated the associations between internalized weight stigma and mental and quality of life outcomes. If longitudinal and experimental studies support the present findings, intervening on coping strategies may promote better outcomes in individuals who are targets of weight stigma.

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PERCEPTIONS OF THIN AND PLUS SIZED MODELS AND ASSOCIATED FACTORS

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Background: Traditionally, clothing retailers in the United States showcase their clothing using models with a thin physique. Recently, some retailers have begun to incorporate more diversity among the models in terms of body size. Little research has been done to examine this change and understand how newly included “plus” sized models are perceived.

Purpose: The current study aims to examine whether models that are considered plus size are perceived differently than conventional, thin models, and if so, to examine potential factors that contribute to a difference in perception, such as weight bias.

Methods: The study included 331 undergraduate students at a mid-sized south-eastern university ($M_{age} = 18.58$, $SD_{age} = 1.51$, $M_{BMI} = 23.9$, $SD_{BMI} = 4.65$, 60.1% female, 69.5% white, 15.5% black, 81.1% Freshman). Data was collected through an online survey platform. Students first viewed randomized images of either thin or plus sized models and answered questions about each image (i.e. Does the model look attractive in this dress?) Students then completed measures that assessed weight stigma, internalized weight bias, and body appreciation, as well as a self-esteem and mood before and after viewing the images.

Results: A t-test revealed that thin models ($M = 173.42$, $SD = 42.85$) were rated as significantly more favorably than plus sized models ($M = 162.6$, $SD = 46.17$, $t(330) = 2.8$, $p < .01$). Ratings of thin sized models were positively associated with pressure from peers to be thin ($r = .12$, $p < .05$) and inversely with weight bias ($r = -.15$, $p < .01$). This appeared to be sex specific, as more favorable perceptions of the thin model was inversely associated with weight bias for male participants ($r = -.28$, $p < .01$), but was overall not correlated for female participants when controlling for males. Ratings of plus sized models were inversely associated with a need to look athletic ($r = .16$, $p < .01$) and with weight bias ($r = -.33$, $p < .001$). A multiple regression analysis found that ratings of plus sized models was predicted by both weight bias and a need to look athletic ($F(2, 313) = 21.11$, $p < .001$), with an R^2 of .113. No associations were found with ratings of either types of models with internalized weight bias, body appreciation, and self-reported BMI.

Conclusions: Models appeared to be viewed differently based on their weight, with thin sized models rated more positively. It's likely that factors such as weight bias, pressure to be thin, and a need to look athletic influenced ratings of each type of model. Interestingly, higher weight bias was associated with lower ratings of both plus and thin sized models, though the effect was stronger for plus models. While the inclusion of more body diversity among models is certainly a positive step, it is clear that more needs to be done in terms of reducing widespread weight bias.

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THE ASSOCIATION BETWEEN HUSBAND'S WEIGHT BIAS, WEIGHT COMMENTS AND HIS AND HIS WIFE'S PSYCHOLOGICAL AND RELATIONSHIP OUTCOMES

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Background: Previous research found that wife internalized weight bias (IWB) and other weight related concerns, paired with husbands' weight related comments/criticisms, were found to be strongly associated with psychological distress and negative relationship outcomes among wives (Carels et al., 2019).

Purpose: The purpose of the current follow-up study is to examine how husband weight bias, IWB and weight related concerns/suggestions directed toward his wife impact his and his wife's psychological distress and negative relationship outcomes, and whether wife's or husband's BMI played a role in the observed relationships. The study further examined correspondence between husband and wife reported data (i.e. reported frequency of weight criticisms).

Methods: The study included 209 husbands ($M_{age} = 49.0$, $SD_{age} = 14.4$) and 209 wives ($M_{age} = 48.9$, $SD_{age} = 14.3$) who were married and in a heterosexual relationship. Data was collected through an online survey platform that aimed to collect a nationally representative U.S. sample (including age, race, and country region). Wives and husbands completed measures that assessed IWB, weight stigma, weight concerns/criticisms directed toward the wife, mate value, relationship satisfaction, sexual intimacy, self-esteem, and depressive symptoms.

Results: Husband and wife data were found to have consistent correspondence across variables. Notably, husband and wives reported similar rates of husband criticisms, suggestions, or concerned comments about wife's weight and similar reporting of husband's ideal mate and whether wives met their husband's ideal mate. Husband IWB was positively correlated with his own reported weight bias and his reported weight related comments towards his wife. Husband's own reported weight related comments, weight bias, and IWB was associated with his own and wife reported psychological distress and negative relationship outcomes. Interestingly, wife BMI was only correlated with husband weight related comments and husband's reported marital satisfaction. Further, regression interaction models indicated that wife BMI did not consistently interact with weight bias to predict husband and wife outcome variables.

Conclusions: The current study expanded previous research on the impact of IWB and weight bias and other weight related concerns/suggestions and their impact on psychological distress and negative relationship outcomes among husbands and wives, and an exploration of how BMI may interact in these relationships.

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A QUASI-EXPERIMENTAL TEST OF A PROCESS- VS. OUTCOME-FOCUSED WEIGHT-LOSS PROGRAM

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Research suggests that focusing on the process of losing weight (e.g., dieting, exercise) may be more beneficial for long-term goal pursuit than focusing on weight-loss itself. This study used a quasi-experimental design to test if a weight-loss program with a process (vs. outcome) focus would improve weight-loss outcomes and subjective experiences with weight loss. Individuals ($N = 448$) participating in process or outcome weight-loss programs at four gyms were assessed at three time points: baseline, end of program (8 weeks), and 2-months following (16 weeks). Participants had their weight measured at baseline and 8 weeks, and completed surveys assessing their use of weight-loss strategies, satisfaction with weight loss, enjoyment of the program, and the difficulty of the program requirements. At 16 weeks, participants self-reported their weight, continued use of weight-loss strategies, and their satisfaction with their diet, physical activity, health, and weight. The gyms provided attendance data during the program and 2-months after, from which we were able to derive an objective measure of participation in workouts.

On average, participants lost 3.19% of their starting weight over 16 weeks. Contrary to expectations, there were no differences across programs in weight loss at 8 or 16 weeks, and those who participated in the process (vs. outcome) program were not more satisfied with their weight loss. Participants in the process and outcome programs found their programs to be equally enjoyable, but those participating in the outcome (vs. process) program reported greater intentions to continue the use of weight-loss strategies, and those participating in the process (vs. outcome) program found the program requirements to be more difficult ($ps < .05$). Yet, more participants in the process program (62.3%) completed the program requirements (e.g., minimum number of workouts) than participants in the outcome program (20.3%), and participants in the process (vs. outcome) program used more weight-loss strategies (e.g., increasing healthy food intake, reducing sedentary behavior), and completed more workouts at 8 and 16 weeks ($ps < .05$). In sum, findings indicate that participation in each program had similar outcomes, but the process focused program may have unique behavioral benefits, such as maintaining engagement with the behavioral demands of weight-loss (e.g., dieting, exercise). This idea should be systematically tested in future research.

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MENTAL HEALTH DIAGNOSTIC PATTERNS IN A NATIONAL SAMPLE OF BEHAVIORAL WEIGHT LOSS PROGRAM ATTENDEES

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Individuals with obesity experience higher rates of mental health disorders (both single disorders and multiple co-occurring mental health disorders) than individuals of normal weight. However, while mental health disorders are associated with a greater number of treatment barriers and may negatively impact weight loss treatment outcomes, little is known about the mental health burden of individuals using behavioral weight loss programs. The current study identifies common mental health diagnoses and diagnostic patterns among participants of MOVE!, the Veterans Health Administration's (VHA) behavioral weight loss program. We used national VHA administrative data from fiscal year 2014 to identify veteran VHA primary care patients who participated in at least one MOVE! session in the previous year (95,798 men and 15,032 women). Using latent class analysis, we stratified by gender and identified different classes of veterans based on their patterns of mental health diagnoses. We also assessed the role of age on class formation and membership. Common classes included one characterized by the absence of mental health disorders, a class characterized by depressive disorders, a class characterized by multiple co-occurring mental health disorders, and a class not characterized by any particular diagnoses, but with a significant comorbidity burden. Unique classes were also found in men in different age groups, including a class characterized by PTSD and depressive disorders in both younger and older men and a class characterized by depressive disorders and substance use as well as a class characterized by severe mental illness among middle-aged men. With the exception of older men, the majority of patients belonged to a class characterized by at least one psychiatric disorder. Additionally, younger patients of both genders were more likely to fall into class characterized by psychological disorders than were older patients. It may be warranted to tailor MOVE! programming to include treatment factors that focus on overcoming barriers to weight loss program engagement and adherence that are associated with mental health disorders and/or consider addressing both obesity and mental health diagnosis in MOVE! contexts. A holistic approach may be particularly important for younger patients who have a higher comorbidity burden and longer care horizons.

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MERITORIOUS AWARD WINNER

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ANYTHING YOU CAN DO I CAN DO BETTER: SOCIAL COMPARISON AND WEIGHT LOSS IN A LIFESTYLE INTERVENTION PROGRAM

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Background: Social comparison is the process of comparing oneself to others in general, as well as to individuals perceived as better off (upward comparison) or worse off (downward comparison), to evaluate one's self-worth or success. Social comparison can increase motivation to engage in behavior change efforts or can result in negative self-evaluation and consequent amotivation. The impact of social comparison among individuals engaged in an online group-based behavioral weight control intervention has not been examined. Therefore, the purpose of this study was to examine whether general social comparison, upward comparison or downward comparison is associated with weight loss outcomes.

Methods: Participants were enrolled in a two site (VT and SC) 6-month online lifestyle intervention program with counselor-facilitated weekly chats. Participants completed the Iowa-Netherlands Comparison Orientation Scale (INCOM) at baseline. The INCOM is a 23-item survey assessing an individual's tendency to make social comparisons and includes 3 subscales: general comparison, upward comparison, and downward comparison. Responses, which range from 1 (strongly disagree) to 5 (strongly agree), are summed for all participants for each subscale. Higher scores indicate a greater tendency to engage in that type of comparison. Weight was objectively measured at baseline and 6 months.

Results: Participants (n=418) had overweight/obesity (M BMI= 35.6 kg/m²), mostly identified as white (72%) and female (91%) and lost an average of 6.3±5.9% at 6 months. INCOM scores were as follows: general comparison 34.6±8.1; upward 16.7±4.9; and downward 14.6±5.1. None of the subscale scores were correlated with 6-month weight loss. However, significantly higher scores were noted among participants who identified as white compared with minority participants on all three scales, indicating greater likelihood to engage in all type of social comparison. Similarly, those with overweight compared with those with obesity were more likely to engage in social comparisons. There were no significant differences in scores between men and women, or among those who dropped out (N=58) compared to those retained.

Conclusion: The tendency to compare oneself with others does not appear to influence weight losses achieved in a behavioral program, either positively or negatively, suggesting that social comparison may not be a relevant psychosocial variable for understanding lifestyle program outcomes.

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FACTORS ASSOCIATED WITH OPTIMAL WEIGHT MANAGEMENT AMONG AFRICAN AMERICAN AND WHITE ADULTS INITIALLY SUCCESSFUL AT WEIGHT LOSS

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Background: Providing ongoing treatment through extended care programs improves weight loss maintenance (WLM), but the effectiveness of these programs for African Americans (AA) are mixed.

Objective: To use the nominal group technique to generate and prioritize factors associated with WLM as experienced by AA and White adults to identify unique factors impacting long-term weight management among AAs.

Methods: AA and White adults who were former participants of structured, behavioral obesity treatment programs implemented at the academic health center (Look AHEAD, ImWeL and Live Well) and achieved $\geq 5\%$ weight loss during that time were classified as Maintainers (continued $> 5\%$ weight reduction for ≥ 1 year) or Regainers ($\leq 5\%$ weight reduction) based on current weight. The average time between participants' completion of initial treatment and the study visit confirming maintainer or regainer status was 1.6 ± 0.5 , 1.7 ± 0.1 , and 11.3 ± 0.8 years for ImWeL, Live Well, and Look AHEAD trials, respectively. Race-stratified nominal groups were conducted to generate WLM facilitators and barriers. These factors were individually prioritized via an online ranking activity.

Results: Participants (N=104; 81.7% women; 48.1% AA) included 46 Maintainers (22 AA, 24 White) and 58 Regainers (28 AA, 30 White). All groups identified common factors associated with WLM, including daily weighing, self-monitoring, regular physical activity, and mindful eating. However, the perceived importance of these factors differed between Maintainers and Regainers and between AA and White adults. Physical activity was the most important facilitator and barrier endorsed by AA Maintainers and Regainers. Daily self-weighing (facilitator) and lack of motivation for, and engagement in physical activity (barrier) were the most important factors for White Regainers. External accountability (facilitator) and losing discipline for weight control behaviors (barrier) were the most important factors for White Maintainers. In contrast to other groups, AA Maintainers' responses indicated that they were more likely to hold themselves accountable, not likely to rely on support from others, and were accepting of minor weight regain.

Discussion: Findings demonstrate the importance of considering participant preferences and experiences in the development of lifestyle interventions for WLM, particularly for AA. Strategies targeting physical activity maintenance and autonomy-supportive approaches may improve WLM in AA.

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VALIDATION OF A PORTABLE BIOELECTRICAL IMPEDANCE ANALYSIS DEVICE AGAINST A GOLD STANDARD CRITERION IN CHILDREN

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Background: Tanita Corporation recently released the DC-430U bioelectrical impedance analysis (BIA) scale. This BIA scale includes a novel proprietary child-specific equation for estimating body composition. The purpose of this study was to validate the new Tanita DC-430U portable BIA unit against a criterion dual-energy X-ray absorptiometry (DEXA) Lunar Prodigy in a sample of healthy children.

Methods: Participants were eligible to participate if they were elementary aged (5-12 yrs.) and had no medical conditions that would prevent them from completing a DEXA scan. Following an overnight fast, participants had their % body fat estimated by both BIA and DEXA. Single absolute ICC and Spearman rank-order correlation were calculated to assess the strength of association between the two methods. A Bland-Altman plot was constructed to assess agreement between the BIA and DEXA % body fat estimates. A difference of 10% between the BIA and DEXA was deemed acceptable.

Results: A total of (N=50) participants (mean age = 9.1 yrs., ± 2.2 yrs., 56% Female) participated in the study. Mean % body fat was higher in DEXA when compared to BIA (28.5 ± 6.5 vs. 20.6 ± 9.0 , $P < .05$). ICCs examining the association between BIA and DEXA for % body fat was weak-to-moderate 0.48 (96% CI = 0.17, 0.68). A moderate-to-strong Spearman rank-order association of 0.78 was calculated. Absolute mean difference between BIA and DEXA was 8.5%. The Bland Altman also indicated that BIA consistently underestimated % body fat when compared to the DEXA across differing levels of % body fat estimates. 84% (n=42) of participants examined fell within pre-determined LOA.

Conclusions: Consistent with past BIA validation literature, BIA underestimated % body fat when compared to DEXA. However, this particular BIA device appears to underestimate body composition at greater magnitude than past studies. The moderate to strong Spearman rank-order correlation indicates that the Tanita DC-430U may be an appropriate tool when examining relative changes in body composition in children. However, this device consistently underestimates body composition by approximately 8% in children when compared to DEXA.

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AN ANALYSIS OF WEIGHT STIGMATIZATION IN HEALTH CARE SETTINGS

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Introduction: Weight stigmatization involves the stereotypes, prejudice, and discrimination imposed on individuals because of their higher body weight. Exposure to weight stigma leads to detrimental effects on health. As the prevalence of obesity increases, it is imperative that weight stigma be addressed. One of the most concerning areas in which weight stigma exists is health care. This study sought to 1) assess the nature of people's lived experience with weight-based discrimination in health care settings and 2) to determine what strategies patients use to cope with such stigmatization.

Methods: Adult men (n = 9) and women (n = 23) with a body mass index of 30 or greater (i.e., classified as "obese") and previous experiences with weight discrimination took part in the qualitative study. Participants answered questions about their experiences with weight stigmatization in health care settings and associated coping strategies using a semi-structured interview format. Interviews were recorded, transcribed, and coded for recurrent themes and patterns in the responses.

Results: Most participants reported at least some experience with weight discrimination in health care settings. The vast majority of responses centered on providers making diagnoses solely based on weight without taking into account other factors or symptoms. In some cases, serious medical conditions, such as hypothyroidism and uterine fibroids, were left undiagnosed in favor of weight-based conditions. Many participants reported rude or offensive comments made by physicians and medical staff in regards to their weight. Participants regularly encountered stigmatizing physical or environmental barriers in clinics and hospitals such as lack of high-capacity scales or properly-sized blood pressure cuffs. Participants utilized a wide variety of coping strategies to deal with weight discrimination. The most frequently used coping mechanisms were seeking social support and binge eating or turning to food for comfort.

Conclusion: Findings from the present study have important implications for interventions aimed at reducing weight stigma in health care settings. The results of this study warrant further examination of how physicians can provide more patient centered-care to obese patients and minimize weight-based discrimination during patient-provider interactions. It may also be useful to integrate opportunities for medical students to learn about and reduce the negative effects of weight stigma.

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RECRUITMENT STRATEGIES FOR MEN OF COLOR

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Racial and ethnic minorities in the US suffer disproportionately from obesity and other comorbidities, yet remain underrepresented in health research. For a 3-year randomized behavioral weight-management trial, we wanted to recruit a sample of individuals who were overweight/obese and had elevated blood pressure or taking blood pressure medication but who also reflected the diverse racial/ethnic backgrounds living in the urban counties surrounding our research center—specifically 55% individuals of color and 50% men. Of special interest was to recruit ~25% men of color.

Direct mail is an appealing recruitment strategy for reaching large target populations of interest such as individuals from underrepresented racial/ethnic backgrounds living across widespread geographical areas. In prior experimental research by our team and others, direct mail letters with a targeted statement about health disparities for subgroups of color generated greater interest in trial participation among women of color than generic letters. Here, we describe our strategies for recruiting men of color.

Via a third-party commercial direct marketing firm, we identified potential men and women of color who lived in zip codes with a high prevalence of individuals of color within ~1 hour from the research center. Direct mail letters included a targeted statement about health disparities for mortality for subgroups of color as well as 10 recommended elements found to increase response rates in prior research (e.g., trial's purpose, benefits to recipients). Additional recruitment strategies regardless of race and ethnicity included local and regional newspaper advertisements, radio spots, and others.

Of randomized participants (n=321), men of color comprised 25.5% (n=82) of the sample, with women of color 23.1% (n= 74), White men 19.6% (n=63), and White women 31.8% (n=102). Direct mail was the most effective strategy among men of color (78.0%, n=64/82) than women of color (50.0%, n=37/74), White men (17.5%, n=11/63), or White women (17.6%, n=18/102). In contrast, newspapers advertisements were much less effective for recruiting men of color (9.8%, n=8/82) than women of color (20.3%, n=15/74), White men (47.6%, n=30/63), or White women (41.2%, n=42/102).

We would not have reached recruitment goals for men of color by solely relying on newspaper advertisements and other non-targeted strategies. Direct mail with targeted statements about health disparities appears advantageous.

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RURALITY, BARRIERS TO HEALTHY DIET AND EXERCISE, AND CORRESPONDING HEALTH BEHAVIORS AMONG OVERWEIGHT APPALACHIAN ADULTS

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Purpose: Barriers to healthy eating and exercise among Appalachian adults may vary by rurality, which could lead to differences in these health behaviors. We sought to determine if there were differences in barriers to healthy eating and exercise by Rural-Urban Continuum Code (RUCC) and to examine the relationship between barriers and corresponding health behaviors.

Methods: Data were from a group-randomized trial that compared a 1-year faith-based weight loss intervention to an active control group among overweight Appalachian adults. Participants from the weight loss group who provided complete data on barriers were included in the analysis. The number of individual-level and social-environmental barriers to healthy eating and exercise were summed. RUCC for each participating church's county of residence was used to define rurality. Baseline and 12-month data on exercise and fruit/vegetable intake were self-reported using standard questionnaires. Mixed effect models were used to examine the association between number of barriers and corresponding health behaviors.

Results: Among the 402 included participants, most were female, white, and married or living with a partner. The number of individual-level barriers to healthy eating differed across rural-urban classification: Appalachian adults from churches in metropolitan counties reported encountering the most barriers (1.38 ± 0.87), followed by those from churches in nonmetropolitan counties not adjacent to a metro area (1.18 ± 0.83), and those from churches in nonmetropolitan counties adjacent to a metro area had the fewest barriers (1.02 ± 0.75). The number of social-environmental barriers to healthy eating and to exercise did not differ across rural-urban classification. Although no association was observed in social-environmental barriers to healthy eating, each increase in the number of individual barriers was associated with 0.355 (95%CI: -0.587, -0.124) decrease in daily fruit/vegetable servings. Each increase in the number of barriers to exercise was associated with 48% lower odds of regular exercise (OR=0.52, 95%CI: 0.40, 0.68) and 24% lower odds of higher level of physical activity (OR=0.76, 95%CI: 0.58, 0.99).

Conclusion: Individual barriers to healthy eating varied by degree of rurality. Barriers to healthy eating and exercise were associated with lower odds of corresponding healthy behaviors. Strategies are needed to address these barriers to improve health behaviors among Appalachian adults.

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COMPARING REACH AND RETENTION STRATEGIES ACROSS COHORTS OF A CHILDHOOD OBESITY TREATMENT TRIAL IN A MEDICALLY UNDERSERVED AREA

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Collaborative systems-based approaches can help address challenges to implementing childhood obesity treatment programs in small towns and rural regions. However, it is unclear how best to recruit and retain families within these programs. This case study describes collaboratively-developed strategies to address reach and retention for a comparative effectiveness trial of two childhood obesity treatment interventions in a rural, medically-underserved region. Strategies were enacted by healthcare, community, and parent partners. Adaptations to recruitment and retention strategies were tracked across 3 cohorts of program families. Reach and retention strategies used in Cohort 1 (C1) included a population health management approach (e.g., medical record identification of eligible children, pediatrician endorsed recruitment letter to the family, follow-up recruitment call), community distribution of recruitment materials, and Parent Advisory Team (PAT) representation at intervention classes. C2 included addition of another clinical recruitment partner, revisions in recruitment materials, distribution of recruitment materials in schools, instructor training in social support strategies for retention, and additional social support from the PAT. C3 added another recruitment clinical partner and program site, expanded eligibility to include younger children, revised recruitment materials again, and added an informational video played in recruitment partner waiting rooms. Physician referral was consistently the most effective enrollment strategy; however, enrollment rates declined across cohorts (44/271, 17% C1; 45/627, 7% C2; 50/830, 6% C3). Of the 1735 eligible families, about 1/3 declined participation and half were not able to be contacted by phone. Of the 192 families scheduled for baseline assessment, 63 (33%) did not attend. Additionally, of 48 potential self-referred families, 29 (60%) did not attend an eligibility screening appointment. Families that did enroll in the study were largely representative of the region's race/ethnicity and household income (63% minority, 42% earning < \$25,000/year). Retention appears more responsive to the adaptations between cohorts, with 6-month retention rates for C1 and C2 at 66% and 85%, respectively (C3 is on-going). Successful recruitment and retention strategies will be presented, along with barriers and lessons learned when recruiting and retaining families into childhood obesity treatment interventions.

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QUALITATIVE COMPARATIVE ANALYSIS OF FACTORS THAT EXPLAIN SUCCESS IN A RURAL CHILDHOOD OBESITY TREATMENT PROGRAM

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Qualitative comparative analysis of factors that explain success in a rural childhood obesity treatment program

The purpose of this study was to explore the variation in outcomes of Building Healthy Families (BHF), an adapted evidence- and family-based childhood obesity program, to identify the context under which the program is most effective in supporting child weight status changes and to understand the conditions or combination of conditions that are necessary and sufficient for successful child weight loss. A necessary condition is one that must be present for the desired outcome to occur but its presence doesn't guarantee the outcome. A sufficient condition is one that, if present, guarantees the outcome will occur. Conventional statistical models may not capture the nuances of these conditions, particularly in smaller sample sizes. Thus, a qualitative comparative analysis (QCA) technique was used to determine (1) program conditions (e.g., group size, normative outcomes) (2) child characteristics (e.g., age, attendance, self-regulation scores), and (3) parent characteristics (e.g., mom/dad/both, parent change in weight) contributed to child weight status improvement. A truth table using a crisp set analysis that includes dichotomizing these conditions and characteristics was used to determine the necessary and sufficient conditions for large magnitude child BMI z-score changes. Of the 75 BHF child participants over nine cohorts with baseline and three-month data (end of program), participants who ranked as the 10 most successful (BMI z-score changes ranging from -0.47 to -0.97) and as the 10 least successful (BMI z-score changes ranging from -0.02 to 0.11) were included in the analysis. Necessary conditions for successful childhood weight loss included high child attendance and self-regulation, at least one high attending adult, parents with high self-regulation scores, and a mother who lost weight during the program. The only distinguishing condition (i.e., sufficient and in addition to the necessary conditions) found in the analysis for all highly successful children was whether or not the mother achieved clinically meaningful weight loss (i.e., $\geq 5\%$). This suggests that family-based childhood obesity program implementers should continue to focus on encouraging high attendance and self-regulation strategies, but could potentially improve program outcomes by using goals for mothers' achievement of clinically meaningful weight loss to increase the likelihood of child success.

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GREATER BODY APPRECIATION PREDICTS LESS EATING PATHOLOGY IN YOUNG ADULTS WITH OVERWEIGHT AND OBESITY

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Body appreciation, characterized as respect for, acceptance of, and holding favorable opinions of one's body, has been associated with increased intuitive eating, decreased weight loss strategies, and decreased disordered eating behaviors. Studies have also found negative relationships between body appreciation and BMI, suggesting that individuals who are of higher weight may be less accepting of their bodies. However, to our knowledge, no research has assessed the relationship between body appreciation and eating pathology specifically for individuals with overweight/obesity, and only one study has utilized a racially/ethnically diverse sample. The current study examined the relationship between body appreciation and eating pathology in racially/ethnically diverse young adults with overweight/obesity. Participants were 130 young adults (89.3% racial/ethnic minority; 71.5% female) aged 18 to 30 ($M = 20.88$, $SD = 3.11$) with a body mass index (BMI) of 25 or greater ($M = 30.30$, $SD = 4.86$). Of the sample, 81 (62.3%) were overweight and 49 (37.7%) were obese. Participants completed a demographics form, the Body Appreciation Scale-2 (BAS-2), and the Eating Disorder Examination-Questionnaire (EDE-Q). On average, participants had moderate levels of body appreciation ($M = 3.18$, $SD = 0.94$; range 1-5) and global eating pathology ($M = 3.17$, $SD = 1.37$, range 0-6) with lower scores on the restraint ($M = 2.66$, $SD = 1.52$) and eating concern ($M = 2.24$, $SD = 1.23$) subscales of the EDE-Q. Linear regression analyses indicated that higher body appreciation was associated with lower global eating pathology ($b = -0.60$, $p < .001$), eating restraint ($b = -0.45$, $p = .001$), and eating concern ($b = -0.46$, $p < .001$). Results extend past research on the potential benefits of body appreciation for eating pathology to individuals with overweight/obesity and suggest that body appreciation may also be beneficial for individuals from diverse racial/ethnic backgrounds. Future research should continue to investigate the relationship of body appreciation and eating pathology for individuals of varying BMIs and racial/ethnic backgrounds, including its potential role as a protective factor in eating pathology.

Learning Objectives:

- Describe the levels of body appreciation and eating pathology in racially/ethnically diverse young adults with overweight/obesity
- Describe relationships between body appreciation and eating pathology in this sample

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APPLYING A STRUCTURED WEIGHT LOSS STUDY TO AN OPEN ENROLLMENT, PRIMARY CARE, DEPARTMENT OF DEFENSE MEDICAL TREATMENT SETTING

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Introduction: With an estimated 66% percent of DoD service members overweight or obese (Meadows, et al., 2018), the need for evidence-based treatment delivery remains high. Investigators have previously reported a successful adaptation of the “Look Ahead/Fit Blue” behavioral weight loss program for DoD service members (Krukowski, 2018). This program incorporates self-monitoring behaviors (activity, diet, and weighing oneself) as well as diet and physical activity education. The present study seeks to translate “Fit Blue” into an open enrollment Military Treatment Facility (MTF).

Methods: From JAN 2016 to JUN 2019, 13 rounds of 12 week groups based on “Fit Blue” were offered. 90-min. sessions emphasized Motivational Interviewing and goal check-ins, with educational components transcribed from “Fit Blue.” Participants were invited weekly to report on weight and self-management behaviors including the number of days in a week they weighed in and tracked calories, minutes engaged in moderate physical activity, and if personally identified goal were met. Group members were referred by providers across the MTF. At the end of each round of treatment, members were invited to additional rounds.

Results: 77 participants (83%) returned for at least a second session. Of these, 74% were female, 26% were active duty, 16% retired from active duty, 55% were family members of active duty or retired service members, and 4% were of unknown military affiliation. 62% of participants attended 6 sessions or more. Average percent weight loss across participants was 3.6%. Percentage weight change ranged from -12% (gained 32lbs) to 25% (lost 55 lbs.). A median 1.6% (3 lbs.) weight loss per 12-session iteration attended was observed. Average weight loss by quartile in ascending order of success was -2.2% (gained 4.8 lbs.), 1.3% (lost 2.6 lbs.), 3.5% (lost 8.1 lbs.), and 12.1% (lost 27 lbs.). Increases in behaviors of interest were observed across quartiles including median number of sessions attended (5, 4, 8, 13), average days per week they tracked calorie intake (2.5, 3.5, 3.9, 5.2), and average days per week they weighed in (4.2, 4.6, 4.9, 5.4).

Conclusion: This study demonstrates that the Fit Blue model can be adapted to a standard medical treatment setting within the DoD. The majority of members opted for multiple sessions and averaged a weight loss of 2-5%, likely resulting in clinically significant health benefits (NIH, 2013). Participants that lost the most weight were more adherent to daily weighing, calorie tracking, and were likely to attend more sessions and more than one group iteration. Participants represented in the highest percent weight loss quartile engaged in the most active minutes as well as highest percentage of weeks engaged in any form of moderate activity. Future efforts should seek to increase referrals, decrease attrition, and increase adherence to self-reported health behaviors.

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INFLUENCE OF WEIGHT SELF-PERCEPTION, WEIGHT STATUS, AND WEIGHT MISPERCEPTION ON THE PURSUIT OF WEIGHT LOSS AMONG YOUNG ADULTS

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Background: Weight loss behavior is salient during young adulthood and can contribute to negative physical and psychological health outcomes. Weight self-perception and weight status do not always align, leaving gaps in how we understand who engages in weight loss behavior. The purpose of this study was to assess the associations between weight loss behavior and weight self-perception, weight status (by BMI), and weight misperception among a nationally representative sample of U.S. young adults.

Methods: Data were analyzed from Wave III (2001-2002) of the National Longitudinal Study of Adolescent to Adult Health. Participants were 18-26 years old. Adjusted logistic regression models were fit to examine associations between weight loss behavior and weight self-perception, BMI, and weight misperception.

Results: Weight loss behavior was significantly greater among young adults who thought they were “overweight” compared to “the right weight” (OR=7.28, 95% CI: 5.57, 9.51) and among those with a BMI indicative of “overweight/obese” compared to “healthy weight” (OR=1.60, 95% CI: 1.27, 2.02) after controlling for sex, age, income, race, and ethnicity. Females were significantly more likely to pursue weight loss than males (OR=2.33, 95% CI: 1.87, 2.90). A significant interaction was seen between sex and BMI. Therefore, data were stratified by sex, showing that weight loss behavior was significantly influenced by weight self-perception and BMI for males, but only by weight self-perception for females.

Discussion: Although BMI is a standard metric used to determine weight status and for health recommendations, weight self-perception appears to be a more robust factor in influencing weight loss behavior among both young men and women. Failing to discuss weight self-perception during healthcare interactions may be problematic, especially for young women. Those at increased risk for engaging in potentially harmful weight loss behaviors may be missed during this critical time of solidifying eating habits and beliefs if only BMI is assessed.

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CHANGES IN PAIN ANXIETY DURING INTENSIVE PEDIATRIC PAIN REHABILITATION PREDICT PAIN, ACTIVITY, AND DEPRESSION AT FOLLOW-UP

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Intensive interdisciplinary pain rehabilitation programs (IIPRP) are typically recommended for youth with debilitating chronic pain conditions who do not respond to outpatient multi-modal treatment. A growing body of research on IIPRP demonstrates improvements in functioning, pain, and distress with recent studies indicating long term maintenance of gains. Some studies have documented improvements in physical functioning, but little is known about how these changes contribute to longer term outcomes of pain, activity engagement, and mood. In addition, existing conceptual models (fear-avoidance model of chronic pain, self-efficacy model) suggest pain-related anxiety and self-efficacy may be important mechanisms related to behavior health change. For this preliminary study, we aimed to test whether improvements in physical functioning (measured via objective measures of gait speed and core and upper body strength), self-efficacy, and pain-related anxiety during an IIPRP would predict activity limitations, pain, and depressive symptoms at 3-month follow-up. Twenty-five participants (10-18 years old) completed measures prior to, upon completion, and 3-months post participation in an IIPRP where they participated in physical and occupational therapy, pain psychology, and medical services for 1-3 weeks. Measures included the 6-Minute Walk Test; 100-Foot Walk; Sit-Up and Push-Up subtests of the Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition (BOT-2); Self-Efficacy Scale; Numerical Pain Rating Scale; Pain Catastrophizing Scale for Children; PROMIS depression SF and Fear of Pain Questionnaire – Child Report. Preliminary results indicate improvements in physical functioning did not predict pain, activity limitations, or depressive symptoms at follow-up ($R^2 < .065$, $p > .18$). Changes in pain catastrophizing predicted significantly fewer activity limitations ($R^2 = .402$, $\beta = .634$, $F(1,23) = 15.46$, $p < .001$) less pain ($R^2 = .235$, $\beta = .484$, $F(1,23) = 7.05$, $p < .01$) and fewer depressive symptoms ($R^2 = .339$, $\beta = .582$, $F(1,23) = 11.78$, $p < .01$) at follow-up. Changes in fear of pain predicted lower pain intensity at follow-up ($R^2 = .151$, $\beta = .388$, $F(1,23) = 4.08$, $p < 0.05$). Study results suggest improvements in self-efficacy of managing one's own pain and pain-related anxiety predicted outcomes at follow-up whereas changes in physical functioning did not. Results are preliminary as recruitment for this study is ongoing and the current sample size is limited. Our long-term goal is to investigate mechanisms of change within IIPRP to guide tailoring treatment to maximize efficacy.

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ANGER MEDIATES THE LINK BETWEEN TRAIT FORGIVINGNESS AND PAIN OUTCOMES AMONG INDIVIDUALS WITH CHRONIC LOW BACK PAIN (CLBP)

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Chronic low back pain (CLBP) is among the most prevalent and painful conditions worldwide. Growing evidence suggests that anger is a major issue among individuals suffering from chronic back pain. Further, anger and resentment have been shown to complicate the course of chronic pain. One factor that may ameliorate the influence of anger on chronic pain is forgiveness, broadly defined as a cognitive process of decreasing negative, resentment-based thoughts, emotions, and motivations. Previous findings suggest that higher levels of forgiveness for a specific interpersonal transgression is associated with lower levels of pain and anger. Moreover, partial correlation analyses suggest a potential interplay between forgiveness, anger, and pain outcomes; though, little research has examined this relationship through formal mediation analyses. The purpose of this study was to examine whether anger mediates the relationship between trait forgiveness (i.e., tendency to forgive interpersonal transgressions over time) and self-reported pain outcomes among individuals with CLBP. CLBP participants ($N = 91$) completed the Brief Pain Inventory – Short Form, PROMIS Item Bank v1.1 – Anger, Trait Forgivingness Scale, and demographic items. In a cross-sectional, regression-based model adjusted for age, sex, and income level, findings revealed that anger significantly mediated the association between trait forgiveness and CLBP outcomes including pain severity [Indirect Effect = -0.03 , 95% CI: -0.05 to -0.004] and pain interference of daily functioning [Indirect Effect = -0.04 , 95% CI: -0.08 to -0.007]. Specifically, a greater level of trait forgiveness is associated with less anger ($p < 0.01$), which in turn is associated with less pain severity ($p = 0.003$) and less pain interference ($p < 0.001$). Our findings suggest that less anger may be a key factor through which forgiveness influences pain outcomes. These findings further highlight the potential of forgiveness-based interventions for ameliorating anger and thereby improving pain outcomes among chronic pain patients.

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CHANGES IN SEDENTARY BEHAVIOR PREDICT CHANGES IN SYMPTOMS IN PATIENTS WITH CHRONIC LOW BACK PAIN.

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Chronic back pain is common, disabling, and difficult to manage. Behavioral treatments are recommended, but finding behavioral targets that are feasible and result in meaningful symptom improvement is a challenge for the field. The purpose of the present work was to examine behavioral predictors of symptom improvement in patients with chronic low back pain who participated in a physical activity intervention. Fifty-six adults with chronic low back pain completed a physical activity intervention wherein they were randomized to receive a Fitbit activity monitor alone or in conjunction with health coaching, or were assigned to a wait-list control condition for three months. Regardless of group assignment, all participants were encouraged to move more and sit less. Active and sedentary behaviors were assessed pre and post-intervention using ActiGraph and activPAL monitors, respectively, and pain symptoms were examined using the total score from the short form of the McGill Pain Questionnaire (MPQ). A regression analysis was conducted with group, baseline pain symptoms, changes in sedentary time and changes in moderate and vigorous physical activity (MVPA) as predictors and change in pain symptoms as the dependent variable. Results demonstrated that the full model was significant ($R^2=0.50$, $p=0.01$). Change in sedentary time was a significant predictor of changes in pain ($\beta=0.30$, $p=0.03$), while change in MVPA was not ($\beta=0.02$, $p=0.87$). Group and baseline pain symptoms were also non-significant predictors in the model (group: $\beta=0.26$, $p=0.07$; baseline pain: $\beta=-0.24$, $p=0.08$). Results suggest that reducing sedentary behavior may be a feasible and meaningful target for improving pain symptoms in adults with chronic low back pain. Future research that explicitly targets this behavior and explores psychobiological mechanisms connecting sedentary behavior and pain could help optimize behavioral interventions to improve chronic low back pain.

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OUTCOMES OF INTERDISCIPLINARY PAIN MANAGEMENT FOR CHRONIC OPIOID USERS IN SAFETY NET PRIMARY CARE

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Background: The use of integrated interdisciplinary programs for the treatment of chronic non-malignant pain is rising along with recognition of the nature of chronic pain. However, despite primary care physicians being the first point of contact for patients with chronic pain, there are limited studies on chronic pain management in primary care settings operating with limited resources, or those working with medically underserved patient populations.

Method: Participants were patients ($n=27$) with long-term opioid-intensive management of chronic pain actively receiving care from an interdisciplinary pain management team within a safety net primary care clinic. Participants ranged in age from 33 to 76 ($M=54$, $SD=11$); were 56% African American/Black, 7% Latinx, and 37% White; and 67% female. Participants received interdisciplinary care from their primary care physician (PCP) and a behavioral health clinician. Outcome measurements were obtained approximately every two months from patients and assessed various aspects of pain-related functioning. Additionally, patients' Morphine Daily Equivalents (MDE), engagement with members of the interdisciplinary team, and exposure to specific behavioral interventions were assessed through chart review.

Results: Behavioral interventions received by patients and longitudinal assessment of their pain outcomes will be presented, including assessment of interactions and mechanisms. Data from over one year of follow-up will be presented, representing visits approximately every two months. At baseline, MDE ranged from 20 to 720 ($M=238$, $SD=187$) with high pain interference scores out of 10 ($M=7$, $SD=2$). On the Opioid Risk Tool, 22% were in the high-risk range, 19% moderate risk, and 59% low risk. Patient self-efficacy was also low (22% severe, 30% moderate, 33% mild, 11% minimal impairment) and pain catastrophizing was high (37% severe, 30% moderate, 33% mild). Preliminary data indicate a diversity of patient pain profiles, but general trends suggest patient interest in decreasing medication usage, improving perceived self-efficacy, and increasing engagement in non-medical management of pain.

Discussion: This project seeks to provide alternative pain management strategies for individuals using opioids for chronic pain management. Preliminary results offer hope for the effective management of chronic pain without sole reliance on opioid use. Continued complex measurement of patient experiences will allow for longitudinal assessment of trends, mechanisms, and interactions, in a sample with concerning baseline pain functioning scores. Additionally, "lessons learned" will be offered for providers considering implementing similar care in their own clinics.

Keywords: chronic pain, opioid, interprofessional, integrative, pain management, primary care, behavioral health, physical therapy, interventional pain

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EFFECT OF PAIN VARIABILITY ON DAY-TO-DAY CHANGES IN FIBROMYALGIA SYMPTOMS

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Introduction: Fluctuating pain levels have been noted in Fibromyalgia (FM); however, few studies have examined the effects of pain variability on symptom course. Studies on FM symptoms have found variations in fatigue, mood, and perceptions of pain unpleasantness can change in the experience of pain over time. Further, past research indicates while some FM patients find fluctuating pain levels distressing, others display resiliency (e.g., effective coping, maintaining positive mood; together, this suggests the experience of fluctuating pain may change the experience of FM symptoms for some individuals. The goal of this study was to examine the effect of pain variability on associations between pain, mood, and fatigue in a sample of FM patients.

Methods: 69 individuals (97% female) diagnosed with FM were asked to call a secure automated phone line each morning for 180 days. Participants then provided ratings of their current experience of the following symptoms using a 0-100 scale (100 most intense) as follows: pain intensity, pain unpleasantness, fatigue, depressed mood and anxious mood.

Results: Multilevel modeling was used to examine the effect of pain unpleasantness, fatigue, and mood on pain intensity. Participants' total amount of pain variability was quantified as their intraindividual standard deviation (ISD) of pain intensity across 180 days (greater ISDs represent greater pain variability). Participants displayed significant within- and between-subject variability in pain intensity. Across all 180 days, higher pain unpleasantness ($b=.823$, $p<.001$) and fatigue ($b=.178$, $p=.001$) predicted higher pain intensity. Greater within-person fluctuations in pain unpleasantness ($b=.001$, $p<.001$), fatigue ($b=.003$, $p=.006$), depression ($b=.005$, $p<.005$), and anxiety ($b=.004$, $p<.001$) all predicted higher pain intensity. While total amount of pain variability (ISD) was not a significant predictor of pain, pain variability moderated the effects of fluctuating pain unpleasantness ($b=.010$, $p=.016$) and fatigue ($b=-.005$, $p=.030$) on pain intensity. There were no significant effects for average depression or average anxiety, nor no significant interactions between pain variability and fluctuating depression or anxiety on pain intensity.

Discussion: Findings suggest affective dimensions of pain and fatigue play an important role in predicting the course of pain over time, and fluctuations in pain unpleasantness, fatigue, and mood predict pain course. Further, for individuals showing greater pain variability over time, fluctuating pain unpleasantness has a stronger effect in predicting pain intensity, while fluctuating fatigue has a weaker effect in predicting pain intensity. Findings suggest that for FM patients with more variable patterns of pain, affective dimensions of pain may be a better predictor of pain intensity than other FM symptoms like fatigue.

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EXAMINING THE UTILITY OF THE PEDIATRIC PAIN SCREENING TOOL TO RAPIDLY IDENTIFY RISK AMONG YOUTH WITH ACUTE MUSCULOSKELETAL PAIN

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Objective: The Pediatric Pain Screening Tool (PPST) is a 9-item screening measure used to identify risk for poor outcomes in youth with chronic pain. The current study examines the utility of the PPST in assessing pain and psychosocial risk in youth seeking treatment for acute musculoskeletal (MSK) pain. We hypothesized youth identified as high risk would have higher pain intensity, pain-related fear, pain catastrophizing, pain-related disability, and sleep disturbances than those in lower risk groups.

Methods: Participants were 110 youth (ages 10-18, $M=13.98$ years, 51.8% female, 53.2% Caucasian) with acute MSK pain participating in a longitudinal study examining risk for development of chronic pain. Youth were recruited from emergency departments ($n=58$) or outpatient clinics ($n=52$). Participants completed the PPST and measures assessing pain, pain-related fear, pain catastrophizing, disability, and sleep disturbances. Using pre-established cut-offs, PPST scores categorized youth into low, medium, and high risk groups. Associations among risk group, demographic and clinical factors were examined. ANOVA and chi-square were used to examine associations between PPST risk groups and self-report measures.

Results: Youth reported moderate pain intensity ($M=4.20$, $SD=2.19$; 0–10 NRS) with 49.6% experiencing pain >4 days per week. Acute pain locations were arm (16.4%), leg (64.5%), and back/neck (19.1%) pain. PPST scores classified 25.5% of youth as high risk, 21.8% medium risk, and 52.7% low risk. PPST risk groups did not significantly differ by child age, sex, race, pain location, fracture status, or BMI. One-way ANOVAs revealed differences in pain intensity, disability, pain-related fear, and pain catastrophizing (p values $<.01$) by PPST risk group. Post hoc analyses revealed the high risk group had significantly greater pain intensity, pain-related disability, pain-related fear, and pain catastrophizing than both the low and medium risk groups (p values $<.05$). Chi-square revealed differences in pain frequency by PPST risk group ($p=.02$). Risk group was not associated with sleep disturbances.

Conclusions: Results suggest the PPST can rapidly screen youth with acute MSK pain to assess level of psychosocial and pain risk. PPST risk may be used to inform treatment recommendations. Future research with longitudinal data will examine if youth identified as higher risk have poorer outcomes, including increased likelihood of transitioning to chronic pain.

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RESILIENCE MECHANISMS: A POTENTIAL PROTECTIVE FACTOR FOR ACUTE PAIN EXPERIENCE AND PAIN CATASTROPHIZING

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Introduction: Recent research has suggested that resilience may serve as a protective factor against chronic pain by decreasing chronic pain experiences and other pain-related factors. However, research has not explored the relationship between resilience and two major pain-related factors: pain catastrophizing and acute pain experiences. Moreover, the overall framework of resilience, its definition, and how it's measured present discrepancies within the literature. Utilizing the Brief Resilience Scale (BRS), we hope to validate the conceptualization of resilience as mechanistic in the context of pain, supporting the Outcome/Process-Oriented framework currently presented in the literature. The current study hypothesizes: (a) individuals with greater resilience mechanisms will report lower scores in pain catastrophizing compared with individuals low in resilience mechanisms (b) individuals with greater resilience mechanisms will report lower subjective pain ratings during an acute pain experience compared with individuals low in resilience mechanisms (c) resilience mechanisms will act as a mediator between the relationship of acute pain ratings, pain catastrophizing, and objective measures.

Method: As part of a larger study, the current study will conduct an acute pain cold-water task, utilizing the BRS and the Pain Catastrophizing Scale (PCS) as measurements to determine its influence on both acute pain experience and pain catastrophizing.

Data Analysis Plan: An ANOVA will determine significant differences between BRS and PCS scores and the demographic variables in the event we need to control for these variables. We then plan to conduct a single correlational matrix to determine significance among the relationships between: resilience mechanism, acute pain ratings, pain catastrophizing, and objective pain measures. If we find significance in these relationships, a Preacher & Hayes (2004) mediation analysis will be used to determine possible mediation effects of resilience mechanisms between these relationships.

Discussion: This study serves importance in the context of pain, for the Outcome/Process-Oriented framework of resilience suggests resilience mechanisms to be modifiable. Attempting to better understand these mechanisms and their effects are salient to further improve current forms of strength-based interventions via adequately incorporating resilience mechanisms as a potential protective factor for pain management and overall health outcomes.

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IMPLICIT PAIN-RELATED FEAR: SOMETHING OR NOTHING? THE RELATION BETWEEN IMPLICIT RESPONDING, MOVEMENT AND DISABILITY.

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Chronic low back pain (CLBP) is a common condition that can lead to emotional distress and physical disability. Fear of pain, a phobic-like response to pain, can contribute to significant avoidance behavior and is associated with disrupted physical and emotional functioning. While questionnaires remain the standard for measurement of pain-related fear, recent work has explored the use of implicit assessment methods. This work suggests that those with CLBP are more likely to implicitly interpret, that is, rapidly and reflexively, back movements and postures as threatening. Despite these recent positive findings, many questions remain about the clinical utility of implicit biases of pain-related fear. Two questions we investigated were if implicit pain-related fear correlated with already established explicit instruments (e.g., Tampa Scale of Kinesiophobia) and if implicit pain-related fear predicted self-reported functioning and physical movement. We used the Implicit Relational Assessment Procedure (IRAP), to assess convergent, predictive and unique predictive validity of implicit pain-related fear. Seventy-four participants with CLBP were recruited and completed the pain-related fear IRAP, along with self-report measures of pain-related fear, distress, and disability, as well as three physical tasks involving the low back (repeated forward bending, loaded forward reach and timed up and go). Both explicit and implicit biases were demonstrated, suggesting the presence of pain-related fear, however, implicit pain-related fear failed to demonstrate convergent validity with previously established instruments, predictive validity of physical functioning, and performance during physical tasks. On the contrary, explicit pain-related fear predicted physical functioning and physical performance. Therefore, implicit pain-related fear, while present in patients with CLBP, may not provide additional utility above and beyond explicit measures of pain-related fear. Further, given the time and technology needed to conduct an implicit assessment and the lack of internal consistency and relatively poor predictive performance of implicit methods, it is recommended that clinical assessment of pain-related fear be based on questionnaire-based instruments.

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ADVERSE CHILDHOOD EXPERIENCES AND EXPERIMENTAL PAIN SENSITIVITY AMONG COMBAT VETERANS.

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Childhood adversity has been identified as a risk factor for several chronic pain conditions. It is possible dysregulated pain processing plays a role in this relationship; however, we are unaware of any study that has examined this among combat veterans, whom are at a higher risk for chronic pain than civilian samples. The purpose of the present study was to examine the preliminary association between self-report of childhood adversity and indicators of pain processing as measured by quantitative sensory testing (QST) among combat Veterans of Iraq and Afghanistan (N = 19). Childhood adversity was measured by the Adverse Childhood Experiences (ACE) scale, a widely-used questionnaire that assesses household dysfunction, physical, emotional and sexual childhood abuse, as well as physical and emotional neglect. QST assessment included static measures of pain processing including thermal pain threshold and tolerance, pressure pain threshold, and dynamic measures including temporal summation and conditioned pain modulation (CPM). The association between total ACE scores and QST measures was examined using Pearson's *r*. Participants were primarily male (*n* = 15, 79%) with a mean age of 33.2 (SD = 6.7) and average pain rating of 4/10 (SD = 2.8) over the previous month. ACE scores were unrelated to thermal pain threshold and tolerances and pressure pain thresholds. However, higher ACE scores were associated with higher thermal pain intensity ratings at threshold (*r* = .47, *p* = .04). Additionally, higher ACE scores were associated with lower CPM (*r* = -.49, *p* = 0.03). These preliminary findings suggest childhood adversity may be associated with deficient pain inhibition among combat veterans. Future research utilizing a larger sample is needed to verify study results and better examine the association between childhood adversity and experimental pain sensitivity.

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SEX DIFFERENCES IN TREATMENT RESPONSE TO PSYCHOSOCIAL INTERVENTIONS FOR CHRONIC PAIN

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Although sex differences in clinical and experimental pain have been widely studied, few investigations have examined sex differences in response to psychosocial interventions for chronic pain. The purpose of the present study was to 1) examine sex differences in treatment response at posttreatment and 6-month follow-up following an 8-week acceptance and commitment therapy (ACT) or cognitive behavioral therapy (CBT) intervention, and 2) explore sex by modality interactions in treatment response. Participants were 114 adults with chronic pain randomized to receive ACT (men: *n* = 27; women: *n* = 30) or CBT (men: *n* = 29; women: *n* = 28). The primary outcome was pain interference as measured by the Brief Pain Inventory (BPI). Binary logistic regression was used to determine sex differences in treatment response assessed in two different ways: minimal clinically significant change (1-unit decrease on BPI) and moderate clinically significant change (30% or greater improvement on BPI). There were no sex differences in pain interference at baseline. A total of 41 (36%) and 43 (38%) participants achieved minimal clinically significant change, and a total of 30 (26%) and 31 (27%) achieved moderate clinically significant change at posttreatment and 6-month follow-up, respectively. There were no sex differences in minimal clinically significant change at either assessment time point. However, women were more likely to achieve 30% or greater reduction in pain interference at posttreatment (OR = 3.35, *P* = .04) and 6-month follow-up (OR = 2.02, *P* = .01). In exploratory analyses, the sex by modality interaction approached significance for moderate clinically significant change at posttreatment (OR = .17, *P* = .06). Inspection of simple slopes revealed that women receiving CBT were significantly more likely to be treatment responders than men (OR = 8.85, *P* = .02); no sex differences were found in the ACT group. Taken together, our results suggest women may experience greater reductions in pain interference following psychosocial interventions for chronic pain compared to men; however, this depended on the criteria used. Furthermore, women may respond particularly well to CBT immediately after treatment compared to men.

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INTERPRETATION BIAS FOR AMBIGUOUS SITUATIONS: ITS PSYCHOMETRIC PROPERTIES AND ASSOCIATION WITH EYE MOVEMENTS

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Theories propose that negative interpretation bias may account for the maintenance of health anxiety and chronic pain. This tendency to appraise ambiguous situations negatively has also been suggested to be associated with selective attention towards or away from potential threats. Previous studies used reaction time paradigms with ambiguous word and face stimuli to measure interpretation bias. However, these tasks lack contextual information which may explain the mixed findings in the literature. Unlike previous measures, the Interpretation Bias Task (IBT) asks responders to rate the probability of benign and negative resolutions for real-world situations where it is unclear what will happen. Yet this novel task has not been validated, nor has its association with attentional processing been examined.

In study 1, we conducted exploratory (EFA) and confirmatory factor analyses (CFA) for the IBT in a sample of young adults ($n = 237$). Several items were removed due to unsatisfactory factor loadings and inappropriate wordings. The model with remaining items showed satisfactory fit. Moreover, self-reported health anxiety symptoms were correlated with interpretation bias for bodily threat and illness-related situations, but not that for social or achievement-related situations, indicating the domain specificity of IBT. The results in study 1 were then confirmed in a CFA in study 2 with a larger sample with similar backgrounds ($n = 1103$). In study 3, undergraduate students with and without chronic pain ($n = 63$) completed the IBT and an eye-tracking task in which they free-viewed faces that were labelled as doctors, patients, or healthy people. IBT scores were calculated based on study 1 and 2. A data-driven machine-learning approach (EMHMM) was adopted to analyse eye movements. Results showed that the chronic pain group interpreted ambiguous situations as more indicative of bodily threat and illness. More interestingly, those with more negative interpretations for illness-related situations tended to avoid looking at the eye region of doctors' and patients' faces, suggesting a relation between negative interpretation bias and avoidance of health-related threats.

The IBT is a reliable and valid measure of interpretation bias. This study suggests interpretation bias may be one mechanism explaining the course and severity of health anxiety and chronic pain, indicating a potential novel intervention target.

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INTERPRETATION AND ATTENTIONAL PROCESSING FOR AMBIGUOUS INFORMATION IN CHRONIC PAIN: A DATA-DRIVEN MACHINE-LEARNING STUDY

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Theories propose that the tendency to interpret ambiguous sensations as indicative of pain, and to selectively attend towards or away from pain-related cues, might underlie the chronicity of pain. However, eye-tracking studies in this context have yielded mixed results. One reason for this is that these studies use arbitrary criteria to quantify eye movements within predefined time windows and regions of interest, which neither capture the dynamic nature of attention nor takes individual differences into account. A data-driven machine-learning method (EMHMM) to analysing eye movements in the presence of pain-related stimuli could therefore offer new insights.

Sixty-three young adults and 63 old adults, half of whom had chronic pain and half did not, completed an interpretation bias task which measured the extent to which they appraised ambiguous sensations as indicative of pain, and an eye-tracking task in which they free-viewed neutral and injury scene images. Subjects' personalised viewing patterns were visualised by EMHMM and were then clustered into an explorative group and a focused group.

Results showed that old adults interpreted ambiguous sensations as more indicative of pain and were also more explorative when looking at neutral images compared to young adults. Also, the association between interpretation bias and being explorative for neutral images was only significant in old adults. One explanation is that when looking at neutral scenes where injury is not present (ambiguous situations), people with greater interpretation bias might perceive them as more negative and thus use a more explorative strategy to detect potential threat in the environment. Further, people with chronic pain had greater interpretation bias than the pain-free group, but there was no difference in eye movements between the two groups.

Numerous studies have investigated cognitive biases in chronic pain, but this study is the first to adopt a data-driven machine-learning method for eye movement analyses and to include a sample of elderly. Our findings show that interpretation bias is greater in older adults and in those with chronic pain, and it might influence how people attend to ambiguous visual information. This study partially supports the models that suggest biased interpretation and attention interact with each other and together account for the maintenance of chronic pain. These two forms of cognitive biases may be novel intervention targets for chronic pain patients.

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DIFFERENTIAL IMPACTS OF DEPRESSION AND ANXIETY ON ACUTE PAIN AMONG INDIVIDUALS WITH COMORBID PAIN AND OPIOID USE DISORDER

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Comorbid pain and opioid use disorder is a significant problem that requires better treatment. Further, this comorbidity often co-occurs with additional mental health comorbidities such as depression or anxiety which may alter how individuals respond to both pain and MAT treatment. The goal of the present study was to examine the impact of depression and anxiety on co-morbid opioid addiction and chronic pain with regards to acute pain tolerance, sensitivity, and perception.

Method: 120 participants with chronic pain and Opioid Use Disorder (OUD) were included (62% male); 60 on an opioid agonist (Medication Assisted Therapy: MAT) for OUD; 60 were not currently on an opioid agonist. Participants completed an acute pain task (cold pressor) in conjunction with a mood assessment (HADS) to assess multiple aspects of pain (tolerance, sensitivity, perception) and mood. Participants placed their non-dominant hand in 2°C water and reported first pain experience (Sensitivity, in seconds), to remove the hand when it was “too painful to bear” (Tolerance, in seconds), and rate the level of pain they experienced (Severity, 0-100 scale).

Results: Within the OUD population on active MAT, patients were more likely to experience elevated anxiety ($F(1,117)=7.33, p<.01$) and depression ($F(1,117)=6.45, p<.01$) compared to the non-MAT group. Depressed individuals on MAT, were more likely to report the stimuli as more severely painful ($F(1,58)=3.76, p<.05$) while Anxious MAT individuals reported greater sensitivity to pain ($F(1,58)=3.95, p<.05$). Both anxious and depressed MAT patients showed less tolerance for pain ($p<.05$'s), compared to non-depresses/anxious individuals in the MAT group, and the non-MAT group.

Discussion: Depressed mood and anxiety differentially affects the pain experience for patients with chronic pain and OUD. Empirical treatment approaches to differentially treat pain sensitivity vs severity vs tolerance will be discussed. Assessment and understanding of these differences are likely to open pathways to more targeted psychotherapy treatment options for individual patients which will allow us to move beyond sole reliance on opioids for pain treatment.

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EXAMINING HEART RATE ERROR ACROSS DIFFERENT EXERCISE TYPES AND INTENSITIES IN FREE-LIVING CONDITIONS

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Background: Wrist-worn Fitbit devices consistently underestimate heart rate (HR) compared to criterion measures (e.g. Polar HR monitor). However, this systematic bias appears to be compounded by additional sources of HR error derived from variations in activity type and intensity, particularly within free-living conditions. This study examined the variability and magnitude of Fitbit HR errors based on activity type, activity intensity, and when activity type and intensity are combined.

Methods: Participants (N=18) were healthy adults who concurrently wore a Fitbit Charge HR (wrist) and Polar H7 (chest) for 7 continuous days while recording any purposeful exercise bouts lasting ≥ 20 minutes. Reported exercise types included walking, running, and using an elliptical. Percent heart rate reserve (%HRR) was used to classify relative intensity as light, moderate, and vigorous (%HRR= 30-39, 40-59, ≥ 60 , respectively). Minute-level HR data were used to calculate mean HR differences, mean absolute percent error (MAPE), and effect sizes (Cohen's d) for type, intensity, and type-and-intensity.

Results: When all exercise bouts were combined, overall mean HR difference between Polar and Fitbit was 5.16 bpm, agreement between devices was high ($r=0.910$) and error was low (MAPE=4.1%). Results were similar when each type and intensity level were examined. However, combining type-and-intensity produced the greatest mean HR differences for vigorous walking (HRdiff=12.01 bpm, MAPE=0.88, $r = 0.562$) and light running (HRdiff=6.84 bpm, MAPE=0.075, $r=0.198$).

Conclusion: HR differences and associated error was greater when activity type and intensity were combined. These results suggest that individual differences in fitness may contribute to the HR errors observed. Future research should examine Fitbit HR error based on %HRR rather than mean HR as those with higher fitness would elicit a lower HR response compared to those with lower fitness.

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GENDER DIFFERENCES IN A RANDOMIZED CONTROL TRIAL TO INCREASE PHYSICAL ACTIVITY AMONG MEXICAN-AMERICAN MIDDLE SCHOOL STUDENTS

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Background: Moderate-vigorous physical activity (MVPA) declines during adolescence, with greater declines among females than males. Physical education class (PE) is an opportunity to increase MVPA, but it is unclear if this occurs in traditional PE classes in which various sports and games are taught and played. The purpose of this randomized control trial was to examine MVPA over time in a circuit-based physical activity program compared to PE class as usual among all students and by gender.

Methods: Mexican American middle school students (N=196) were recruited from a charter school district in Houston, Texas, and randomized to receive either circuit-based PE or PE as usual (i.e. learning and playing different sports games) for a school year. Students in the circuit-based PE class were taught to regulate their exertion/intensity by monitoring their heart rate during physical activity. MVPA was assessed using accelerometry (Actigraph AG, model GT1M) at baseline and at the end of the academic year. Evenson cut points were used to categorize physical activity as MVPA. A repeated measures ANOVA was conducted to examine changes in MVPA over the academic year, overall and stratified by gender.

Results: Participants were 12.06 ± 0.61 years old and 53% were female. Overall those in circuit-based PE increased their MVPA significantly more than those in PE as usual ($F=5.78$, $p=0.02$). Males in both conditions increased MPVA and there was no significant difference between conditions ($F=1.40$, $p=0.24$). There was a significant difference between conditions among females ($F=5.06$, $p=0.03$). Females in the circuit-based condition increased MVPA, whereas MPVA decreased among those in the PE as usual condition.

Conclusions: Circuit-based PE may be an important strategy to increase MVPA, particularly among females. This study illustrates the importance of the type of PE programming needed to facilitate MVPA and has policy implications for PE curriculum requirements. Further research is needed to understand gender differences in MVPA to better tailor physical activity opportunities.

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EFFECTS OF EXERCISE DOSE AND INTENSITY ON BODY MASS, FITNESS, AND SOCIAL FUNCTIONING AMONG OLDER ADULTS

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As a result of scientific and medical advances, there has been a dramatic social transformation in longevity, with an increasing number of individuals living longer than ever before. This rise in life expectancy necessitates research on lifestyle choices and health-promoting behaviors that reduce the risk of age-related disease and improve quality of life and functioning. Regular exercise, which can reduce or even reverse several of the physical, emotional, and social issues characteristic of aging, is one such health behavior and was targeted in the current intervention. Specific aims of this trial include: (1) to explore baseline associations between exercise participation and demographic (e.g., gender), health (e.g., body mass index), fitness (e.g., VO_2 max), and social (e.g., social support) outcomes; and (2) to determine whether changes in several of these outcomes depend on exercise dosage. Sedentary adults aged 60 and over were randomly assigned to either low-intensity continuous training (LICT) or moderate-intensity continuous training + interval training (MICT+IT) as part of a 16-week, supervised exercise paradigm. Tests of baseline associations showed significant negative correlations between age and baseline loneliness ($r = -.188$, $p = .02$) and perceived isolation ($r = -.174$, $p = .03$) and a significant correlation between gender and baseline social disconnectedness ($r = .160$, $p = .04$), with men reporting more social disconnection than women. Preliminary regression analyses were utilized to evaluate changes in outcomes of interest from baseline to follow-up. There was a linear effect of time on body mass index (BMI) [$F(1, 153) = 12.117$, $p = .001$]; on average, BMI decreased by 0.138 kg/m^2 during the intervention, and this decrease did not significantly differ by condition [$F(1, 153) = 2.244$, $p = .136$]. There was also a linear effect of time on VO_2 peak [$F(1, 153) = 4.376$, $p = .038$], with an average increase of 0.012 L/min from baseline to follow-up. This effect was qualified by a significant linear timeXcondition interaction [$F(1, 153) = 18.679$, $p < 0.001$]; relative to participants assigned to the LICT condition, those assigned to the MICT+IT condition showed greater improvements in VO_2 peak. Additional analyses will test a preliminary mediational model to examine associations between changes in BMI, fitness, and social function. Implications for future intervention development will be discussed.

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DESIGNING A MULTIPLE TECHNOLOGY-BASED PHYSICAL ACTIVITY INTERVENTION FOR LATINA ADOLESCENTS: FORMATIVE RESEARCH FINDINGS

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Background: Only 3% of adolescent girls meet national physical activity guidelines, with Latina adolescents reporting especially low activity. To address this disparity, we are developing an individually-tailored, theory-based intervention to increase moderate-to-vigorous physical activity (MVPA) in Latina adolescents, using multiple channels, including social media platforms (Instagram) and SMS messages. Given the scarcity of interventions for Latina teens and the rapid evolution of technology use in adolescents, we conducted focus groups to inform the most effective and acceptable use of technology channels for this intervention.

Methods: Nine focus groups, each ranging from two to eight Latina teens (n=50), were held to better understand preferences for content, volume, and timing of Instagram posts and SMS messages that promote physical activity and behavioral processes of change. Participants viewed a slideshow of 16 sample Instagram posts and 12 sample text messages. They were asked how often they would like to receive information via each channel, if they found the content appealing, helpful, and/or motivating, and, if not, to offer suggestions to improve the content. Participants recorded their feedback on a provided notepad.

Results: Overall, participants expressed a preference for generalized content on Instagram, and for personalized text messages based on their goals and activity. Written feedback on the sample Instagram posts elicited emergent themes including preferences for brightly colored images, limited and succinct text, concrete tips and applicable information, incorporation of cultural themes and Spanish phrases, images of relatable and ethnically diverse models engaging in physical activity, images promoting social support, and videos demonstrating specific exercises. Regarding SMS messages, participants preferred personalized messages and reminders based on their goals and unique wearable tracker data at a rate of no more than one message per day. They favored casually worded, positively framed messages, and were averse to language they perceived as “negative”, “annoying”, or “nagging.”

Conclusion: Latina teens were generally receptive and enthusiastic towards Instagram and SMS messages as physical activity intervention channels, and expressed consistent preferences for how to utilize each channel. Appropriate use of these technology channels has potential for high reach, low cost interventions in this high-risk population.

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EFFECTIVENESS OF ADAPTING AND IMPLEMENTING THE COMMUNITY GUIDE APPROACHES TO PROMOTE PHYSICAL ACTIVITY IN A MICROPOLITAN CITY

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Strong evidence supports the promotion of physical activity (PA) in community settings, yet few studies have tested how effective this evidence is to promote PA among residents of micropolitan rural (mid-size classification) communities.

We engaged in a Community-Based Participatory Research (CBPR) intervention to promote PA among residents of a micropolitan community in the Midwestern US. In partnership with community stakeholders, we adapted informational, environmental, behavioral and social support recommendations from the Community Guide to the context, need, and resources of the community. Lay Health Advisors were recruited and trained to implement the two-year intervention. We report the 2-year findings.

We used a hybrid type I study to evaluate the community-wide intervention impact. We had a random recruited cohort of residents who completed an interview assessing demographics and wore an accelerometer for the following 7 days at baseline, 12-, and 24-months. In addition, we randomly selected respondents for two (2013 and 2018) cross-sectional community-wide surveys to measure PA with the Global Physical Activity Questionnaire (GPAQ). Using the cohort data, we estimated the intervention's impact on the temporal change in PA by first computing the centered log ratio compositional slope for MVPA and sedentary behavior and then performing MANCOVA regression. Using the cross-sectional community surveys, we estimated the population level PA change using calibrated GPAQ in a stratified analysis using census data.

The cohort consisted of 120 participants with a mean (sd) age of 47 (14), 67% of which were female, 60% had some college education or more, and on average participants had MVPA of 76 min/day. There was a significant global change in PA ($p = 0.029$). Overall, there was a decrease in sedentary behavior and an increase in light activity. On average, we observed a reduction of 45 minutes of sedentary behavior and increase of 35 minutes of light activity per day among cohort participants. At the community-level we found a significant increase of MVPA overtime ($p = 0.011$). The trend of MVPA of the population increased between 2013 and 2018.

Using CBPR principles allowed for effective contextualization of the intervention to community resources and needs. Adapting and implementing evidence-based approaches for promoting PA in a micropolitan context was effective at increasing PA and decreasing sedentary behavior among residents.

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6:15 PM-7:30 PM

EFFECTS OF EXERCISE INTERVENTION DELIVERY METHODS ON MODERATE TO VIGOROUS PHYSICAL ACTIVITY AMONG PROSTATE CANCER SURVIVORS

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Purpose: Prostate cancer (PC) is commonly treated with androgen deprivation therapy (ADT), which leads to fatigue, loss of muscle mass, and reduced quality of life (QOL). Physical activity (PA) is an effective intervention to counter these side effects, contingent upon increasing and sustaining PA. Supervised exercise programs demonstrate consistent benefits and increased PA; however, few studies have directly compared other delivery methods. This study examined changes in moderate to vigorous PA (MVPA) following a supervised 1:1, supervised group-based (SGB), or a home-based smartphone-(HBS) assisted exercise intervention in PC survivors on ADT.

Methods: Participants were men with PC on ADT, stratified by length of ADT use and site. All participants were instructed to complete 4–5 days/week of aerobic, resistance and flexibility exercise for 6-months. Those in the 1:1 supervised and SGB interventions received 3 face-to-face sessions per week with a qualified exercise professional. MVPA was assessed at baseline and 6-months (post-intervention), using an Actigraph GT3X accelerometer, and the Godin Leisure-Time Exercise Questionnaire (GLTEQ). Accelerometer data were extracted in 60-second epochs, and MVPA was defined as >1952 activity counts per minute. Accelerometer MVPA was expressed as weekly minutes, and number of continuous bouts ≥10 minutes per day. For the GLTEQ, weekly MVPA minutes were calculated as total strenuous x 2 + total moderate. Means ± standard deviations and frequencies (%) were calculated; change in MVPA was compared between groups using the Wilcoxon rank sum test.

Results: At baseline ($N=53$), participants were 70.1 ± 7.5 years old, mostly white (71.7%), on ADT for ≥3 months (67.9%), and diagnosed with clinical stage T1-2 (50.1%) or T3 (34.0%) PC. Accelerometer MVPA decreased by 9.8 ± 88.1 (1:1), 10.6 ± 42.7 (SGB) and 38.0 ± 195.4 (HBS) minutes per week ($p=0.63$). MVPA bouts increased by 0.2 ± 2.7 (1:1), 0.4 ± 1.8 (SGB), and 0.3 ± 7.6 (HBS) ($p=0.86$). Self-reported MVPA increased by 80.0 ± 116.5 (1:1), 62.8 ± 192.4 (SGB), and 5.8 ± 238.3 (HBS) minutes per week ($p=0.59$).

Conclusion: No differences in MVPA change were found between intervention groups, suggesting PC survivors may benefit from multiple exercise delivery modalities.

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DO PHYSICAL ACTIVITY BEHAVIORS DIFFERENTIALLY INFLUENCE COGNITIVE FUNCTION IN YOUNGER VERSUS OLDER BREAST CANCER SURVIVORS?

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Evidence suggests younger breast cancer survivors (BCS) experience greater psychological burden compared to older BCS. It is unknown if these differences extend to cognitive function (CF) or how lifestyle behaviors (e.g., moderate-to-vigorous physical activity [MVPA]) influence CF in younger vs older BCS. This study: 1) examined differences in CF between BCS < 60 and 60+ years-old across a 6-month period; and 2) determined if MVPA differentially influenced CF by age group. BCS ($n=249$) completed questionnaires and cognitive tasks assessing CF and MVPA (Godin Leisure-Time Exercise Questionnaire). CF was operationalized as subjective memory impairment (SMI; Frequency of Forgetting Scale) and cognitive performance (Flanker, Mazes, Task-Switch, Trails B). A subsample ($n=204$) also wore an accelerometer. We used analysis of covariance to examine differences in CF by age (< 60 vs 60+) and test between-subjects effects of baseline MVPA and age*MVPA interaction on CF across time in the full and accelerometer samples. Models were adjusted for employment, menopause, diagnosis stage, chemotherapy, time since diagnosis, comorbidities, and depressive symptoms. BCS < 60 years-old reported more MVPA ($p=.002$) and greater memory impairment compared to BCS 60+ years-old ($p=.01$). Younger BCS performed faster on Mazes, Task-Switch, and Trails B (all $p < .05$). Neither self-reported nor objectively-estimated MVPA were associated with SMI (all $p > .21$). However, self-reported ($p=.02$) and objective-estimated MVPA ($p=.08$) were associated with faster Task-Switch performance. No age*MVPA interactions were observed in either sample. Among covariates, receipt of chemotherapy, depressive symptoms, number of comorbidities, time since diagnosis, menopausal status at diagnosis, and employment status differed by age group. Additionally, chemotherapy and depressive symptoms emerged as predictive of age differences in SMI. Although often equally operationalized as CF, our data suggest SMI and cognitive performance are distinct constructs with distinct etiologies. Greater SMI among younger BCS were reflective of chemotherapy receipt and depressive symptoms, while reduced cognitive performance in older BCS was related to reporting more comorbidities. Research to dissect the age- versus cancer-related components of observed effects is warranted. Further, evidence-based approaches (other than MVPA) to decreasing depression may be beneficial for improving SMI, particularly in younger BCS. Findings also suggest that engagement in MVPA may elicit selective objective cognitive benefits among BCS of any age.

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EXERCISE BELIEFS AND PHYSICAL ACTIVITY: USING NETWORK ANALYSIS TO MAP ASSOCIATIONS AMONG BELIEFS

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Research on how beliefs about exercise relate to exercise engagement has focused on how endorsement of exercise beliefs differ across levels of exercise. Additional insight may be gleaned by examining whether there are also differences in the nature and strength of the relations between exercise beliefs. Network analysis provides a way to describe the conditionally independent relations between a set of variables for a given group of individuals. Thus, this approach can provide information on how the unique relations between psychologically relevant variables may vary as a function of behavior.

The present study examines differences in relations between beliefs about exercise for individuals who vary in their level of moderate-to-vigorous physical activity (MVPA). Leveraging data from a prior study (Chmielewski, Sala, Tang, & Baldwin, 2016), we conducted a network analysis to examine the interrelations between a set of exercise beliefs (e.g., self-efficacy, social norms, intrinsic motivations) across those with 0 min/week of MVPA (N = 216), 1-165 min/week of MVPA (N = 198), and 285+ min/week of MVPA (N = 194). Comparisons of overall network strength and structure using the Network Comparison Test (van Borkulo, Epskamp, & Millner, 2016) suggest that the networks were quite similar across groups. The global network strength for individuals with no MVPA was marginally stronger than for individuals with low MVPA ($S = 1.92$, $p = .056$), but individuals with high MVPA did not differ in strength from the other two groups, $ps > .3$. The three groups did not differ in their overall structure, indicating that similar beliefs were connected in all three networks, $ps > .16$. The present findings suggest that the associations between this set of evaluative beliefs about exercise are relatively consistent across levels of exercise, with potentially overall weaker connections for those with low MVPA relative to those with no MVPA. Moving forward, it will be important to replicate these findings with larger samples, as well as to compare groups with more narrowly defined patterns of exercise behavior.

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PARENT- AND TEACHER-REPORTED BEHAVIOR AS PREDICTORS OF PRESCHOOL CHILDREN'S PHYSICAL ACTIVITY

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Background: Children's hyperactive and inattentive behavior can be indicative of ADHD development. In school-age children, national survey data indicated that children with ADHD engage in less moderate-to-vigorous physical activity (MVPA) than typically developing peers, but these trends conflict with other studies. Data in preschoolers is sparse within the literature and has shown that hyperactive and inattentive children had higher levels of MVPA. Previous studies have relied on parent report to describe children's hyperactive and inattentive behaviors, which is an inherent limitation as parents are not with their children during the preschool day. Therefore, the purpose of this study was to identify relationships between preschoolers' parent (PR) and teacher-reported (TR) behavior and PA.

Methods: Baseline data from children ($n=58$, $age=4.0\pm0.8$ years, 52% male) enrolled in two preschool centers were utilized for this cross-sectional analysis. Children's hyperactivity and inattention was assessed via PR and TR subscales using the Behavior Assessment System for Children, Third Edition. PA was assessed with Actigraph GT3X+ accelerometers for seven consecutive days. Linear regression models were conducted with PA intensities as outcome variables and children's behavior variables as predictors with a second set of models adjusted for age and sex.

Results: A one unit increase in hyperactivity t-score was associated with a 1.4 minute reduction in sedentary min/day (95% CI=-2.64, -0.23) and a 0.9 minute increase in MVPA (95%CI=0.38, 1.37) while a one unit increase in inattention was associated with 0.7 minute increase in MVPA (95%CI=0.06, 1.33). All associations remained significant following adjustment for age and sex. No associations were observed between PR behavior and total day PA. There was a weak positive association between PR and TR inattention ($r=0.39$, 95%CI=0.13, 0.60), but no relationship between PR and TR hyperactivity.

Discussion: In this sample, greater TR hyperactivity and inattention were associated with less sedentary time and greater MVPA during the preschool day. Interestingly, there were no associations between PR and total day PA. This suggests that parents and teachers observe and report children's behavior differently, which may be problematic for studies utilizing a single assessment. Future studies should utilize multiple measures to accurately depict these relationships in children.

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FACILITATION OR DETERIORATION: THE EFFECT OF HIGH-INTENSITY EXERCISE ON EXECUTIVE FUNCTION

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Backgrounds: Research evidence has shown that acute exercise facilitates executive function (EF). However, some studies suggest that high-intensity exercise can deteriorate EF, potential due to more cognitive efforts required to maintain the high workload. The effect of acute high-intensity exercise on EFs remains inconclusive. In addition, most previous studies focus on just one component of EF without testing the general effect of acute exercise on the three components of EF.

Purpose: To provide evidence on the effect of high-intensity acute exercise on EF, in comparison with moderate-intensity.

Method: The study adopts a within-subject experimental design. 29 college students (14male, 15female) completed measures of EF for three times, i.e., prior to and following 20-min running at high- (90% Heart Rate Reserve, HRR) and moderate- (40-60% HRR) intensity, respectively. The cognitive tests measure three components of EF, namely the 2-Back (updating), Flanker (inhibition), and More-odd shifting (shifting), which were arranged in a counter-balanced randomized order. A series of gender (male v.s. female) x time (pre- v.s. post-exercise) x intensity (high- v.s. moderate-intensity) multivariate repeated-measure multivariate analysis of variance (MANOVA) were performed to examine whether intensity influence the relationship between exercise and EF.

Results: First, the manipulation check indicated that high-intensity exercise was associated with higher levels of mental effort ($t=-3.72$; $p=.000$), perceived fatigue ($t=-3.51$; $p=.000$) and task difficulty ($t=-3.52$; $p=.000$) as compared with moderate-intensity exercise. The MANOVAs demonstrated no significant interaction effect ($ps > .101$) for intensity x gender and main effects for gender ($ps > .079$), but the main effect of intensity was significant for all RTs on three EF measures ($ps < .028$). Specifically, a significant reduction in RT of 2-back test from baseline to high-intensity condition ($p < .05$) was observed, whereas no difference between baseline and moderate intensity ($p=.43$) was identified. However, for Flanker and More-odds switching test, exercising at both moderate and high-intensity reduced RT from baseline to post-exercise at both high- and moderate-intensity exercise, and there was no difference in RT between the two intensities.

Conclusion: In general, 20-min running at both high- and moderate-intensity induced an improvement in performance of EF. Effect of high-intensity acute exercise is at least comparable with moderate exercise, indicating facilitative rather than detrimental effect on EF. Further studies are needed to test the different combination of intensity and duration on EF and elucidate the mechanisms underlying such difference.

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PILOT STUDY TESTING THE EFFICACY OF A NOVEL VIRTUAL REALITY SIMULATION TO EXPERIMENTALLY MANIPULATE ENVIRONMENTAL ELEMENTS

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Background: Data from observational studies indicates that the presence of certain environmental elements (e.g., lights and trees) are correlated with higher levels of physical activity. Due to the costly and at times, near impossible nature of manipulating environmental elements and randomly assigning people to experience different versions of an environment, few experimental studies have been done.

Purpose: To test the efficacy of a novel virtual reality (VR) program that enables researchers to experimentally manipulate environmental elements in a time and cost-effective manner.

Methods: A VR simulation was developed to mimic the downtown area of Fort Collins, Colorado. Participants were randomly assigned to experience one of two versions of the VR model: the control condition ($n=10$) and the greenery-enhanced version ($n=3$) where participants saw additional street trees, planters, and flowers in the downtown area. Participants were fitted with a VR headset (Samsung Odyssey) and HP backpack computer to enable them to move freely in a large gymnasium. Subjects were given a five-minute period to adjust to the VR experience after which they were allowed to stay in their assigned simulation for up to 30 minutes. Afterwards, the subjects were asked to complete a survey about their experience.

Results: Participants in the greenery-enhanced condition remained in the simulation for 18% longer on average than those in the control condition. 92% of participants reported little to no nausea, dizziness or eyestrain.

Conclusions: The study demonstrates that VR technology can be successfully utilized to experimentally manipulate environmental elements and to understand how these environmental changes impact physical activity-relevant outcomes including perceived safety, attractiveness, and walking behavior itself.

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WORK HARD, PLAY HARD: THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND ALCOHOL USE IN COLLEGE STUDENTS

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Physical activity has been associated with many positive outcomes. However, higher levels of physical activity seem to be associated with higher rates of alcohol use among college students. Few studies have studied the direction of this relationship, and important confounds, such as extraversion and sensation-seeking, remain unaddressed. In addition, studies have shown inconsistent findings concerning the influence of gender in this association. To address these questions, we collected 4 waves of data from each semester of junior and senior year. A total of 1,534 undergraduate students (65% female) from four different universities participated in this study. Participants reported how much mild, moderate, and high physical activity they engaged in in the past week. They also reported how frequently they consumed alcohol (from never to 4 or more times a week). Our results indicated that alcohol use positively predicted future physical activity ($r's = .10 - .11$) and physical activity positively predicted future alcohol use ($r's = .08 - .14$). In addition, these correlations were stronger in males ($r's = .05 - .28$) compared to females ($r's = .04 - .11$). We also examined extraversion and sensation-seeking as confounding variables in this relationship. However, when we controlled for these traits, the relationship between physical activity and alcohol use remained significant. These findings advance theoretical understanding of how these health behaviors are linked and suggest further studies to explore potential causal mechanisms. It is important to better understand this relationship in order to develop targeted interventions to promote healthy behaviors in college students.

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MERITORIOUS AWARD WINNER

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DIFFERENCES IN COGNITIONS AND PHYSICAL ACTIVITY AMONG HIGHER AND LOWER RESILIENCE ADULTS WITH CHRONIC PAIN

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Nearly 20% of Canadian adults experience chronic pain persisting 6+ months. Participation in light and moderate-vigorous physical activity is a recommended pain self-management strategy, but participation is low. Resilience, which involves adapting well to adverse events like chronic pain, may help people sustain participation in valued behaviors including physical activity. Based on resilience models, adults with higher resilience may use more adaptive cognitive resilience mechanisms, including pain acceptance and self-regulatory efficacy to overcome pain-related barriers [SRE-pain] and less maladaptive cognitive vulnerabilities, including pain catastrophizing, to be active. To date, very little research has examined resilience in adults with chronic pain. Thus, the study purpose was to examine whether adults living with chronic pain who reported higher versus lower resilience differed in resilience mechanisms, vulnerabilities, and physical activity. Participants ($N = 195$; $M_{age} = 40.03 \pm 12.68$ years) completed online surveys that assessed pain acceptance, SRE-pain, pain catastrophizing, and demographics, including pain intensity, at Time 1. Light and moderate-vigorous physical activity were assessed 2 weeks later at Time 2. Higher ($n = 97$) and lower ($n = 98$) resilience groups were identified and compared using a multivariate analysis of covariance (MANCOVA). The overall MANCOVA, controlling for pain intensity, was significant; Pillai's Trace = .29, $p < .001$, $\eta^2_{partial} = .29$. Follow-up ANCOVAs revealed that higher resilience adults reported significantly higher pain acceptance and SRE-pain, lower pain catastrophizing, and greater moderate-vigorous physical activity compared to lower resilience adults (p 's $< .05$; small to large effect sizes: $\eta^2_{partial}$'s = .03 to .26). Findings provided novel prospective evidence that adults with chronic pain differed in resilience mechanisms, vulnerability, and the higher intensity behavior of moderate-vigorous physical activity. Future research should examine the stability of differences in resilience-related cognitions and whether they help adults to sustain physical activity. A better understanding would provide the foundation for future intervention research promoting resilience mechanisms and reducing vulnerabilities to target improved physical activity engagement among adults to better manage their chronic pain.

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EVALUATION OF THE ACCEPTABILITY AND USABILITY OF A WEARABLE ACTIVITY TRACKER AMONG LOW-ACTIVE FEMALE ADOLESCENTS

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Background: Most adolescents do not meet guidelines for physical activity (PA) and only 20% of girls meet the recommendations by the 9th grade. Although few interventions involving wearable activity trackers have been conducted, there is some evidence that these devices may motivate adolescent girls to become more physically active.

Purpose: The aim of this study was to evaluate the acceptability and usability of the Fitbit Flex 2 among inactive adolescent females.

Methods: This exploratory descriptive study included adolescent females in the 8th and 9th grades ($N = 33$) who were recruited from a high school in the Midwest. Girls were excluded if they were involved in sports ≥ 3 days a week, had a health condition that compromised their PA, or did not read and write English. Participants were given a Fitbit Flex 2 to use for one week and were given access to the Fitbit App by computer or phone. Daily steps, distance in miles, and active minutes were tracked by the research team. Focus groups were conducted to determine participants' perceptions of the tracker device and app. Girls also completed a survey regarding the acceptability and usability of the activity tracker (0-3 Likert scale). SPSS V23.0 was used to analyze quantitative data. Thematic analysis was used to examine qualitative data in ATLAS.ti 8.4.

Results: Mean age of the sample was 14.62 ($SD = .60$) years. Of the participants who reported race ($n = 24$), 58% were non-white. Participants completed a daily average of 7,758.87 ($SD = 1763.69$) steps, 3.66 ($SD = 1.98$) miles, and 21.69 ($SD = 13.71$) minutes of MVPA. Participants liked using the Fitbit (Mean = 2.94, $SD = .25$) and agreed that it was easy to use (Mean = 2.56, $SD = .50$). Of the girls who used the Fitbit App ($n = 28$), all but one liked using it. Girls reported that the Fitbit Flex 2 made them more aware of their PA goals, motivated them to do more steps, and kept them active. Some girls reported issues with usability including difficulty getting the tracker on and off the wrist, lack of a screen on the Fitbit for visualizing PA data, and confusion regarding the green light system. Limitations included a small sample size and missing MVPA data.

Conclusions: Overall, the Fitbit Flex 2 was well received by participants and they recommended including it in interventions to increase PA. A more advanced activity tracker with a screen display and better reliability for capturing MVPA minutes is suggested for future research.

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THE IMPACT OF ACTIVE VIDEO GAME PLAY UPON TIME SPENT IN PHYSICAL ACTIVITY AND SCREEN-BASED ACTIVITIES IN SEDENTARY CHILDREN.

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Background: Few children obtain recommended amounts of daily physical activity, partly due to excess time spent in screen-based sedentary activities. Active video games (AVG) combine screen-based technology with physical motion and can lead to light to moderate physical activity in children. However, evidence suggests providing children with AVGs does not increase moderate to vigorous physical activity (MVPA), possibly because children who play AVGs tend to also engage in sedentary screen-based activities, such as sedentary video games and television, rather than active play. How beginning AVG play influences children's choice of other activities, both active and sedentary, is currently unknown.

Objectives: To examine how exposure to active video games influences children's physical activity, sedentary activity, and time spent in alternative activities

Methods: Sedentary children (N = 49) (ages 8-12; BMI percentile 8-97th) were provided with a video game system, active and sedentary video games. Participants were instructed to play the active video games three times per week and the sedentary video games as they chose for six weeks, followed by a 4-week washout when both game types were played ad libitum. Participants were instructed to wear a physical activity monitor for seven days and fill out a 24-hour recall detailing time spent in school, active play, and screen-based activity on four randomly selected days at baseline, post-treatment (week 6), and post washout (week 10).

Results: MVPA did not change over time ($p = 0.094$). Light activity decreased baseline to 10 weeks ($p = 0.006$) and 6 to 10 weeks ($p = 0.017$), while sedentary behavior increased from baseline to 10 weeks ($p = 0.005$) and 6 to 10 weeks ($p = 0.007$). AVG play increased from baseline to 6 weeks ($p < 0.001$) and decreased from 6 to 10 weeks ($p < 0.001$), while sedentary video game play decreased from baseline to 6 weeks ($p = 0.001$) and baseline to 10 weeks ($p = 0.0001$). Changes over time were not observed in active play ($p = 0.191$), social activities ($p = 0.592$), other hobbies ($p = 0.398$), or television ($p = 0.319$). Computer/phone use showed an almost significant decrease from baseline to 6 weeks ($p = 0.053$). AVG play also did not vary based upon the season ($p = 0.525$) or school year ($p = 0.733$).

Conclusion: AVG play did not impact children's involvement in active play or MVPA. AVG does not appear to lead to increased time on screen-based devices, although it may displace light activity.

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FEASIBILITY OF A BRIEF, VIDEO-CHAT INTERVENTION FOR PROMOTING LIFESTYLE PHYSICAL ACTIVITY SELF-EFFICACY AMONG WORKING ADULTS

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Engagement in lifestyle physical activity (LPA) can complement other forms of structured physical activity (PA) and provides more choices in one's pursuit to meet public health guidelines. We hypothesized that mobile health interventions providing motivational support may promote LPA via self-efficacy-enhancement. To test this hypothesis, participants were randomized to receive three, brief (10-minute) Social Cognitive Theory (SCT)-guided Google Duo-powered video-chat sessions targeting LPA or time-matched video-chats emphasizing work-life balance, each conducted in the first three weeks of a six-week study. A 2 (group) x 2 (time) repeated measures ANOVA was conducted to examine change in self-efficacy for LPA among (N=72) low-active, working adults between ages of 25-64 ($M=46.57 \pm 9.24$; 73.60% women; 100% work 35+ hours/week). Self-efficacy was assessed prior to the first video chat and at the end of the third chat, and covariates assessed at baseline included age, gender, education, self-efficacy and PA (7-day average Fitbit Charge 3-derived steps). There was high compliance (98.61%) with video chat completion and one dropout (missing data was minimal and assumed random at week 1 and 3 [1.39%, 4.17%, respectively] and plausible values were estimated and imputed via established procedures). Overall, 82.60% of participants reported that they enjoyed participating in the study, 84.10% would recommend this program to a friend/family member, and 73.9% believed the video chats were helpful for increasing their PA levels (irrespective of group). As hypothesized, there was a statistically significant group x time interaction involving self-efficacy for LPA, $F(df=1, 62)=4.029$, $p=0.049$, partial $\eta^2=0.061$ (moderate effect). After completion of the video chat-phase, participants in the LPA-targeted intervention groups' self-efficacy > control group ($M_s = 83.24 \pm 2.73$ vs. 76.16 ± 2.77). Similarly, a second RM-ANOVA was conducted for self-efficacy to regulate work-life (SRWL) and although no such interaction was found ($p > 0.05$), both the intervention and control group showed improvements in SRWL from week 1 ($M_s = 71.60 \pm 20.45$ vs. 67.88 ± 14.15) to week 3 ($M_s = 77.31 \pm 23.25$ vs. 77.53 ± 14.40); as hypothesized, change was more pronounced among control group. These data support our hypothesis that SCT-guided video interactions with low-active, full-time working adults may promote confidence for engaging in LPA. Additional data on feasibility outcomes will be presented and implications will be discussed.

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PERCEIVED PHYSICAL ACTIVITY COMPETENCE SPATIAL AUTO-CORRELATION AMONG ADOLESCENT FRIENDSHIP NETWORKS AT A SUMMER CARE PROGRAM

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Introduction: Adolescent physical activity (PA) is considered vital for healthy psychological, social, and physical development. Adolescents who report feeling they are more competent in PA are more likely to achieve recommended amounts of PA. However, most adolescents do not achieve these recommended amounts with a notable decline as they get older. While schools provide a structured environment for PA, some children, particularly in low-income families, depend on summer programs for supervision and structured care during summer months. This study aims to investigate adolescents' perceived PA competence at a summer care program and the possible role of friendship networks have in an adolescent's competence levels.

Methods: Adolescents at a summer care program (age 8-12) completed researcher-administered surveys at the start (time 1) and end (time 2) of summer. Perceived skill competence was measured by asking adolescents to rate how good they felt they were at PA in certain settings: at school, outside, on the playground, at the summer care program, and at home. Adolescents were also asked to provide names of up to five peers whom they hung around with, talked to, and did things with the most while at the program. Analysis of variance (ANOVA) was used to determine potential differences in mean perceived skill competence responses based on setting. Linear network autocorrelation models were used to determine network effects or clustering of perceived skill competence within the program.

Results: At time 1, ANOVAs revealed that adolescents (n=100; μ age=9.9 years; 47% male; 62% Black) reported significantly higher perceived skill competence while at the summer care program than in any other setting. However, there were no significant differences among perceived skill competence scores based on setting for adolescents surveyed at time 2 (n=77; μ age=9.8 years; 51% male; 60% Black). There was a significant network effect for average perceived skill competence scores at time 1, indicating adolescent perceived skill competence scores were associated with those of their friends. This association was not significant at time 2.

Conclusions: It is possible this summer care program facilitated opportunities for adolescents who may have differing perceived skill competence to interact with each other and become friends. These opportunities may also encourage adolescents of all competence levels to be more physically active together during the summer months.

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COGNITIVE FUNCTIONING AND EXPLICIT PHYSICAL ACTIVITY ATTITUDES AND SELF-REGULATION ASSOCIATED WITH THE ACTIVITY CHOICE INDEX

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Physical activity (PA) assessments typically fail to account for transient moments in one's daily life and the extent to which effortful decisions (vs. non-conscious motives) account for one's choosing of active over sedentary behavior (e.g., walking instead of taking transportation). The *Activity Choice Index* (ACI; "During the past 7 days, how often have you engaged in ... choosing to park further away from destination, 1 = Never, 5 = Always") is a relatively new 6-item questionnaire designed for this purpose. To date, the ACI has been validated in Portuguese samples and little is known about the extent to which choices are associated with executive functioning (EF) and explicit (physical activity self-beliefs) vs. implicit motives. The purpose of this study was to validate the ACI in a U.S. sample of middle-aged adults and to test theorized mechanisms underlying the activity choices targeted by the ACI. Data from this study were derived from 133 middle-aged adults ($M_{age} = 53.82$; 79% women; BMI = 32.06) who were randomized to either a cognitive-motor training or attention control video-watching intervention, each involving a 20-hr supervised program. Participants completed baseline (M0) and post-intervention testing at Month 1 (M1). At M0 and M1, participants wore a Fitbit for 7 days (3-day average was computed), and completed the *Godin Leisure-Time Exercise Questionnaire* (GLTEQ), *Physical Activity Self-Regulation Questionnaire* (PASRQ), measures of PA-related self-efficacy, explicit and implicit attitudes, and a battery of cognitive assessments (e.g., dual task [DT] performance). No group differences in ACI (only assessed at M1 follow-up) were observed, so subsequent analyses used the collapsed sample. Bivariate correlations were low but statistically significant ($p < .05$) between ACI and baseline and M1 Fitbit steps (r 's = .28, .25) and GLTEQ (r 's = .24, .21). Baseline and M1 PASRQ (r 's = .46, .40), exercise self-efficacy (r 's = .21, .27) and self-schema (r 's = .19, .19) were positively associated with ACI. Interestingly, implicit attitudes were not associated with ACI (r 's = -.03, -.10, $p > .05$) and negative correlations were found with specific ACI items "park further away" and "standing over sitting" (r 's = -.21, -.30). DT correlated only with the "park further away" item at M1 ($r = .22$). The pattern of findings suggests that components of EF and conscious PA self-regulation may have a key role in enacting daily, effortful decisions to be physically active. This study adds to the scientific evidence supporting the ACI's construct validity and provides novel relations with cognitive performance. Together, these findings offer support for the theorized role of EF and self-regulation in conscious activity choices.

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SUBJECTIVE ACTIVATION ASSOCIATED WITH LOWER BLOOD PRESSURE AFTER EXERCISE USING VIDEOGAMES, BUT NOT STANDARD EXERCISE

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Aerobic exercise has salutary effects on resting blood pressure, and choice in the mode of exercise may potentiate this benefit. Differences in modes of exercise may yield different subjective states during exercise, with implications for effects on health-related outcomes including cardiovascular biomarkers. Subjective experiences of activation may facilitate the regulation of autonomic arousal and, correspondingly, blood pressure. Thus, individuals who experience greater subjective arousal during exercise may have greater opportunity to entrain autonomic regulation. This study examined data from a trial comparing exercise video games (EVG) and standard exercise (SE) protocols. We anticipated that pre-post exercise increases in subjective activation would be associated with greater reductions in resting heart rate (RHR), systolic and diastolic blood pressure (sBP and dBP). Data were analyzed from 171 healthy adults randomized to SE ($n=85$) vs. EVG ($n=86$) conditions. Both conditions involved supervised exercise sessions thrice weekly for 12 weeks. Activation was assessed via the Felt Arousal Scale (FAS), a single-item Likert scale of subjective activation (1 = low arousal, 6 = high arousal), administered before and after exercising, once weekly. RHR, sBP, and dBP were recorded at baseline and at 12 weeks. Number and duration of exercise sessions was not significantly different between conditions. Participants in the EVG condition had greater increases in pre-to-post session FAS scores over the course of the intervention period. Adjusting for condition, increases in pre-to-post session FAS scores were not associated with differences in RHR by end of treatment ($p=.35$). However, increased FAS scores were associated with reduced sBP ($b=-3.35$, $SE=2.24$, $p=.03$) and reduced dBP ($b=-2.31$, $SE=1.27$, $p=.04$) at end of treatment. Moderation analyses revealed an effect of increased FAS scores on BP in the EVG condition (sBP $b=-7.29$, $p=.02$; dBP $b=-5.09$, $SE=1.77$, $p=.01$), but not the SE condition (sBP: $p=.57$; dBP: $p=.51$). These findings provide evidence that subjective activation during exercise may play a role in downstream effects on blood pressure, independent of the effects of minutes and intensity of exercise. Other emotive factors such as enjoyment may contribute to the influence of arousal, and should be examined in further research.

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EFFECTS OF PROPORTIONAL COMPETITION WITH GROUPS

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Group contingencies and competitive arrangements have been studied as tools to increase physical activity. Proportional competition, in which a prize is split based on relative performance rather than "winner take all", is especially understudied. This study aims to examine how variations of proportional competition affect physical activity. Specifically: 1) describe physical activity observed within conditions, 2) evaluate differences in physical activity between conditions, and 3) examine individual and group trends in daily physical activity.

Eight participants were instructed to wear a Fitbit Zip™ for five Using a within-subjects reversal design, we compared four conditions: baseline (no competition), independent proportional competition (all participants against each other), between-group competition (participants cooperate within teams and against other teams), and within-group competition (participants compete within and across teams).

Baseline steps were low ($M=4,821$, $SD=4,577$), slightly higher in between-group ($M=6,983$, $SD=4,757$), higher in within-group ($M=11,712$, $SD=5,622$), and highest in independent proportional competition ($M=12,598$, $SD=6,660$). The differences between conditions were statistically significant ($F(5,234)=14.004$, $p<.001$). Tukey post-hoc revealed that step counts in both within and independent conditions were significantly higher than between ($\Delta M=4728.95$, $p=.001$; $\Delta M=5615.80$, $p<.001$) and baseline conditions ($\Delta M=6890.20$, $p<.001$; $\Delta M=7777.05$, $p<.001$), and that there were no significant differences between the within and independent proportional competition condition means ($p=.973$) as well as the between-group and baseline means ($p=.430$). Individual time series graphs show that daily step counts generally followed group trends, and those who did not follow trends remained stable throughout the study.

These results show that if an intervention relies on a competition among different groups, a within-group competition set-up would most likely produce the best results. However, independent proportional competition yielded the highest number of steps and was most preferred by the participants on average, showing that proportional competition alone or in groups can be effective for increasing activity level. Future research should evaluate if similar results can be seen in different populations (e.g. sedentary adults, children) or used for different health behaviors (e.g. caloric intake, weight loss).

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PROMOTING WELL-BEING AMONG LATINOS: CAN A PHYSICAL ACTIVITY INTERVENTION MOVE THE NEEDLE?

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Latinos are currently the largest racial/ethnic minority population in the US. Few studies have examined well-being among Latinos and the evidence appears mixed. Physical activity (PA) provides known health and well-being benefits; however, less than 30% of Latinos report engaging in PA daily. This research examines whether a PA intervention leads to changes in overall well-being and its constituent sub-domains. Data are derived from the On the Move Trial (N=350 Latinos, mean age=51 years, 73% women), which tested the effectiveness of a linguistically and culturally targeted interactive PA intervention across communication modalities (human phone contacts vs. computer-driven text-messaging). Participants completed a novel, psychometrically validated measure of well-being, the Stanford Well for Life Scale (SWLS). The SWLS assesses nine well-being domains, including physical health, stress and resilience, financial stability, spirituality/religiosity, purpose and meaning, sense of self, experience of emotions (both positive and negative), social connectedness, and exploration/creativity. An overall well-being score was also calculated. A series of multiple regression models were employed to evaluate between-arm differences. Compared to the text-advising arm, the phone-based human advising arm showed baseline to 6-month improvements in overall well-being ($\beta=.17$, $p < .05$), along with improvements in the following domains: stress and resilience ($\beta=.28$, $p < .05$), experience of emotions ($\beta=.24$, $p < .01$), and purpose and meaning ($\beta=.19$, $p < .05$). As expected, no changes were detected for domains not hypothesized to be impacted by PA, such as finances, exploration/creativity, or religiosity/spirituality. Preliminary evaluation of 12-month data indicate improvements in overall well-being are stable and may potentially increase in magnitude ($\beta=.29$, $p < .01$). The findings suggest that programs employing some form of real-time person-to-person contact, including by phone, appear promising for improving well-being relative to computer-driven forms of mobile contact like text-messaging. This has implications for the development and implementation of technology interventions. As the US becomes increasingly diverse, optimizing health and well-being for racial/ethnic populations is a crucial next step for public health and health equity research.

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“I PLAN SO I CAN:” INCREASES IN EXERCISE BEHAVIOR OVER TIME ARE PRECEDED BY EXERCISE PLANNING AND SELF-EFFICACY

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Purpose: Self-regulation interventions that include mental imagery can increase exercise behavior months later. We examine two unanswered questions: what is the trajectory of behavior change over time that is associated with such interventions; and what health cognitions precede such changes?

Methods: 500 adults age 30-64, with < 150 minutes of exercise in the last week and few comorbidities, were randomized to one of six experimental conditions in a 3 (risk display format: text vs. table vs. risk ladder) x 2 (mental imagery topic: exercise vs. sleep hygiene [active control]) factorial design. After receiving personalized risk estimates, participants listened to an audiorecording that used mental imagery to guide them in developing goals related to exercising or sleep hygiene behaviors and in making plans for achieving the goals. Participants received text message reminders to complete the mental imagery for 3 weeks post-intervention, 4 weekly surveys by text to assess behavior and imagery and goal-related constructs, and a mailed survey 90 days post-baseline. To limit participant burden, the text message surveys included only items related to the participant's assigned mental imagery topic. This precluded measuring exercise behavior among participants in the sleep condition, and vice versa. Therefore, these analyses include only participants who engaged in exercise-related mental imagery (n=229). Repeated measures data were analyzed using a correlated errors model with a compound symmetry covariance structure. Minutes of exercise in the last week was the outcome. Predictors for exercise at each timepoint were imagery and goal-related variables from the previous timepoint: image clarity, planning, positive affect, and self-efficacy. Several covariates were included.

Results: 83% of participants answered all 4 text surveys. Exercise increased from baseline to 90-day followup (from 52.5 to 115.2 mins/week, $p < .001$). The largest increases were between baseline and week 1 (from 52.5 to 99.4 mins, $p < .001$) and between week 1 and week 2 (from 99.4 to 114.0 mins, $p < .001$). Exercise decreased slightly from week 4 to 90 day followup (119.4 to 115.2 mins) but remained higher than baseline ($p < .001$). Planning and self-efficacy at one timepoint were positively associated with exercise behavior at the next timepoint ($b=12.1$ and $b=8.9$ mins/week, respectively, $p < 0.05$), but image clarity and positive affect were not ($p > 0.05$). The benefits of planning and self-efficacy did not change over time ($p > .05$ for their interaction terms with time).

Conclusions: Using audiorecordings and text messages to administer mental imagery-based self-regulation interventions is feasible and can encourage exercise behavior over a 90-day time period. Using text messaging for survey administration is also feasible, despite space constraints imposed by the text messaging format.

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CHANGES IN PSYCHOSOCIAL OUTCOMES IN COMMUNITY-DWELLING OLDER ADULTS FOLLOWING A “STAND UP AND MOVE MORE” INTERVENTION

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Background: Older adults spend most of their waking hours sedentary, increasing risk for functional decline, chronic disease, and premature mortality. Emerging research suggests that sedentary behavior interventions can reduce sedentary time but little is known about effects of such interventions on psychosocial variables, which may be important in sustaining sedentary behavior reductions over time.

Objective: To examine the effect of a “Stand Up and Move More” workshop on habit strength, self-regulation (SR), self-efficacy (SE), and outcome expectations (OE) in those who participated in the sedentary intervention (SUMM) compared to waitlist controls (WLC). It was hypothesized that only the SUMM group would show improvements in habit, OE, SE, & SR over time.

Methods: Community-dwelling older adults ($N = 56, 74 \pm 7.2$ years) were randomized to either a SUMM group ($n = 31$) or a waitlist control group (WLC $n = 25$). SUMM met for 4 weekly sessions & a refresher session at 8 weeks. Accelerometers measuring sedentary time & questionnaires assessing habit, SR, SE, and OE were administered at baseline, post-workshop (week 4), & follow-up (week 12). Data were analyzed with 2x3 repeated-measures ANOVAs & Pearson's correlation coefficients.

Results: There were significant group by time interactions ($p < 0.05$) for habit strength, SR, and OE. SUMM decreased sitting habit and increased habit of standing up post-workshop & maintained at follow-up, whereas WLC had no change. Though SR composite score increased across the 12 weeks, it was higher in the SUMM group post-workshop, compared to WLC. OE also improved in the SUMM group compared to no change in WLC. SE for standing up an additional 10-12 times/day did not change across the 12-weeks but changes in SE negatively correlated with total sedentary min/day ($r = -0.31, p < 0.05$) such that greater increases in SE were associated with greater decreases in sedentary min/day post-workshop.

Conclusions: A 4-week SUMM workshop effectively promoted more frequent use of SR strategies and improved habit such that subjects were more likely to take standing breaks and less likely to sit. Results also suggest that the workshop increased expectations of positive outcomes as a function of standing more. Future interventions should consider examining habit, OE, SE, and SR to better understand the psychosocial factors underlying sedentary behavior change.

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A CROSS-SECTIONAL EXAMINATION OF PHYSICAL ACTIVITY, SEDENTARY TIME, AND SLEEP BETWEEN PARENTS AND NON-PARENTS USING NHANES

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Background: Physical activity (PA) is widely accepted as a health-enhancing behavior. Unfortunately, the majority of U.S. adults do not meet aerobic PA recommendations. Parents in particular are at increased risk of physical inactivity due to barriers related to caregiving, lack of time, competing responsibilities, and limited social support. Few studies have examined parental status and gender-related differences in PA and associated health behaviors, especially from a nationally representative sample. These potential differences will inform key areas for future intervention, program delivery, and policy development. Therefore, the purpose of this study was to examine PA and related health behaviors of parents and non-parents and to determine whether these differences varied by gender.

Methods: Cross-sectional data from five cycles of the National Health and Nutrition Examination Survey (2007-2008, 2009-2010, 2011-2012, 2013-2014, and 2015-2016) were used for analysis. The Global Physical Activity Questionnaire was used to assess subjects' physical activity and sedentary time. Health-related variables explored included body mass index (BMI), waist circumference, amount of sleep, hours worked, and sedentary time.

Results: Overall, non-parents ($n=4324$) reported more recreational moderate-to-vigorous PA ($p < 0.001$), more sleep ($p = .05$) a lower BMI ($p < 0.001$) and waist circumference ($p = .0007$) compared to parents ($n=5217$). However, parents reported fewer hours of sedentary time each week in comparison to non-parents ($p < .0001$). While there were statistically significant differences in BMI across parental status, we found no significant between-group differences for BMI across gender for parents ($p < .521$) and non-parents ($p < 0.870$). Further, when comparing non-parents and parents by gender, the primary difference in findings was that while female non-parents reported more sleep than female parents ($p < .0002$), there was no significant difference between the sleep of male non-parents and male parents ($p = .626$).

Conclusion: Non-parents, especially males, reported higher levels of PA, sleep and other positive health outcomes while parents reported less sedentary time. Thus, future interventions should: 1) Explore potential underlying mechanisms behind these disparate behavioral outcomes; and 2) Focus on the development and implementation of PA engagement and sleep improvement strategies especially for female parents that can be integrated into parents' daily routines.

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WHAT MOTIVATES CHILDREN AND ADOLESCENTS TO BE PHYSICALLY ACTIVE? PERSPECTIVES FROM A GERMAN SPORTS SCIENCE ACADEMY

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Background: Physical inactivity in childhood and adolescence is a global phenomenon that is also present in Germany, with only 26% of youth meeting the WHO physical activity (PA) guidelines. Thus, we investigated which motivational aspects play a role in youth's PA behavior.

Method: Participants were current or former scholarship students of the German national academic foundation promoting the top German academic students across disciplines who participated in the summer 2019 Sports Science Academy. An online questionnaire based on a consensus of 15 motivational factors included individual (e.g. curiosity, fun), social (peers and family), and environmental (e.g. facilities, geographics) aspects. Items were rated on a scale from 0 ("not motivating at all") to 3 ("highly motivating") separately for children (6-12 years) and adolescents (12-17 years).

Results: Participants (n=79 [86% participation rate]; 50.6% female, mean age=28.24 years [SD=9.23], BMI=22.20 kg/m² [SD=1.89], PA=7.07 hours/week [SD=3.96]) completed the survey. The five most important motivational aspects for children as rated by the participants were: Fun (m=2.81 [SD=.49]), family role model of active lifestyle (m=2.47 [SD=.74]), curiosity (m=2.28 [SD=.69]), accessible facilities (m=2.19 [SD=.71]) and imitation of peers (m=2.09 [SD=.71]). The three lowest ratings were marketing (m=1.07 [SD=.72]), physical appearance (m=1.00 [SD=.82]), and health (m=.52 [SD=.70]). The five most important factors for adolescents as rated by the participants were: Judgement by peer group (m=2.55 [SD=.60]), group belonging (m=2.45 [SD=.71]), physical appearance (m=2.39 [SD=.79]), social media (m=2.27 [SD=.90]), and fun (m=2.25 [SD=.58]). The lowest ratings were geographic factors (m=1.35 [SD=.66]), curiosity (m=1.33 [SD=.69]), and health (m=1.25 [SD=.84]).

Discussion: This sample rated the PA motivations different for children and adolescents. In childhood, motivation was thought to include individual, family, and environmental aspects. In adolescence, peer/social influences seem to be the most salient, while adolescents' own interests are less important. For both children and adolescents, health was deemed as least motivating. This should be used to tailor developmentally appropriate interventions to promote youth PA.

Zinnowitz 2019 AG1 Participants: Benjamin Bentner, Franz Glüer, Viola Hößl, Severin Hox, Christiane Huber, Marcel Huppert, Tabea Kling, Phillip Kuck, Juliane Lanz, Julia Lohr, Isabella Naujoks, Jasmin Quambusch, Igor Ryabinin, Babak Salam, Corina Santacruz, Hannah Schiedel, Angela Sievernich & Nadja Verhoeven.

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RECRUITMENT OF PARTICIPANTS FOR PHYSICAL ACTIVITY INTERVENTIONS: SHOULD WE USE WALK SCORES?

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Considerable time and effort are expended in recruiting and screening individuals to participate in physical activity intervention trials. One approach to developing targeted recruitment is to assess the objective walkability of potential participants' residential neighborhoods (that is, the ease of pedestrian mobility reflected in a Walk Score). We have completed recruitment of sedentary breast cancer survivors into a randomized controlled trial. A total of 874 participants contacted the study staff: 279 (32%) screened eligible, 441 (50%) screened ineligible, 114 (13%) were non-responsive and 40 (5%) were not interested. Walk Score data were determined using Walk Score® (<https://www.walkscore.com/>) for the sample of 808 participants who provided home addresses at screening. Walk Scores range from 0-100, with a score < 50 indicating car dependence and a score > 70 indicating high walkability. Participants were 57.4 years of age on average (SD=12.23), the majority (85%) were Non-Hispanic and reported their race as White (64%). The sample's mean Walk Score was 18.27 (sd=21.18, range: 0-97). Using analysis of variance, we examined the association between average neighborhood walkability and screening result. As a subsequent step, using spearman rank correlations, we examined associations between age and Walk Score separately by screening result. Results indicate a significant difference in mean Walk Score by screening result ($F=3.20$, $p=.02$). Posthoc comparisons using a Sidak adjustment suggest significant differences in mean walkability with eligible participants having significantly lower Walk Scores compared to ineligible participants (mean difference=-5.0, SE=1.65, $p=.01$). Finally, among eligible participants, there was a significant negative correlation between age and Walk Scores suggesting older participants lived in areas that did not facilitate walking ($\rho=-.13$, $p=.03$). There were no other significant associations between age and walkability among ineligible, non-responsive or not interested participants. These data suggest that recruitment efforts could be directed towards residential neighborhoods that have low Walk Scores, if the goal is to recruit sedentary individuals. Additionally, intervention trials for older breast cancer survivors may invest recruitment efforts in neighborhoods with low walkability. Assisting these individuals to find locations that facilitate physical activity may be essential to developing effective interventions.

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QUALITY OF LIFE BURDEN IN CUTANEOUS T-CELL LYMPHOMA

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Cutaneous T cell lymphoma (CTCL) is both an oncologic diagnosis and an inflammatory disease, and patients therefore carry the emotional burden of a cancer diagnosis as well as the physical and psychological burden of CTCL symptoms and treatment. Quality of life (QoL) in patients with CTCL therefore remains an important outcome measure. As a first step in evaluating QoL in this patient population, CTCL patients were recruited from general dermatology and multidisciplinary CTCL clinics between July 2017 and August 2019 (n=119; mean age 65 [38-90]; 54 [45%] women; 97 [82%] white; 82 [69%] married; 25 [21%] advanced stage [IIB-IV]). QoL was measured at study enrollment using the eight subscales of the RAND SF-36 (with higher scores indicating better QoL) and the Skindex-29 Emotions, Symptoms, Functioning, and overall summary scores (5-point scale), with higher scores indicating more negative impact of one's skin condition on QoL over the past four weeks. Separate multiple linear regression models for each QoL measure included comorbidities, sex, marital status, CTCL stage (early [IA-IIA] vs. advanced [IIB-IV]), and the severity of itching over the past two weeks using the 10-point Itch Visual Analog Scale (VAS); the Skindex-29 overall measure was also included in each SF-36 subscale model. Advanced stage was associated with impairment of QoL in four of eight SF-36 domains and all Skindex-29 summary measures. Greater number of comorbidities and QoL impairment on the Skindex-29 overall score were both associated with all eight SF-36 subscales, but greater number of comorbidities was not associated with any Skindex-29 summary scores. Conversely, more severe itching on the VAS-Itch was associated with greater QoL impairment on all Skindex-29 summary scores but not on any SF-36 subscales (all $p < .05$). Pruritus is highly prevalent in patients with CTCL and has been previously demonstrated to have a significant impact on QoL, questioning the sensitivity of the SF-36 in evaluating QoL in patients with CTCL. Receiver operating characteristics curves confirmed these findings, demonstrating that the SF-36 subscales less sensitive in distinguishing patients with advanced-stage CTCL from patients with early-stage CTCL compared to the Skindex-29 measures, with areas under the curve (AUCs) ranging from 0.797-0.833 for Skindex-29 summary measures and from 0.352-0.483 for SF-36 subscales (< 0.5 , performing worse than random chance). We are currently interviewing patients to identify the issues determining QoL in this patient population in order to develop a more sensitive measure that addresses these concerns.

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CHANGES IN PHYSICAL AND MENTAL HEALTH-RELATED QUALITY OF LIFE AFTER QUITTING SMOKING IN INDIVIDUALS WITH MOBILITY IMPAIRMENTS

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Health-related quality of life (HR-QoL) predicts morbidity and mortality. People with mobility impairments (MIs; use assistive devices to ambulate) smoke at twice the rate of the general population, and smoking is associated with poor HR-QoL. However, it is unknown whether quitting improves HR-QoL in smokers with chronic MIs. We hypothesized that quitting smoking would be associated with better physical and mental HR-QoL, particularly in non-depressed smokers. We also explored the role of MI severity as a moderator. This is a secondary analysis of a smoking cessation induction trial (n=241, 56% female, M age=55.3 yrs, 36% Black). Participants had chronic MIs and did not have to be motivated to quit to enroll. We categorized participants according to smoking status: 'Smokers' (smoking at 4- and 6-months), 'Abstainers' (quit at 4- and 6-months), 'Relapsers' (quit at 4- but relapsed at 6-months), and 'Late Quitters' (smoking at 4- but quit at 6-months). We administered the Medical Outcomes Study ShortForm Health Survey (SF-12) at baseline, 4- and 6-months and computed physical (PCS) and mental (MCS) summary scores. We assessed depression with the Patient Health Questionnaire (depressed=scores ≥ 10), and MI severity by the presence of skilled home care. Data were analyzed as intention-to-treat (missing=smoking) with linear mixed models.

Prospective analysis showed that the effect of smoking status on the PCS score was moderated by depression ($F(3,250)=9.4, p < .001$), after controlling for age, MI severity, treatment group, and time. Among the non-depressed, 'Abstainers' (vs. 'Smokers') improved their PCS score over time ($M \text{ diff.}=16.7, t(250)=3.9, p_{\text{adj}} < .001$). 'Late Quitters' also improved their PCS score vs. 'Smokers' ($M \text{ diff.}=21.5, t(250)=4.1, p_{\text{adj}} < .001$) and vs. 'Relapsers' ($M \text{ diff.}=16.1, t(249)=2.4, p_{\text{adj}}=.03$). Such group differences were not observed among those with depression. We found a significant smoking status by time interaction effect on the MCS score ($F(6,294)=3.5, p=.002$), after controlling for age, depression, MI severity, and treatment group. 'Abstainers' (vs. 'Smokers') improved their MCS score at 4-months ($M \text{ diff.}=13.2, t(225)=3.0, p_{\text{adj}}=.02$) and 6-months ($M \text{ diff.}=20.2, t(225)=4.7, p_{\text{adj}}=.001$). 'Relapsers' (vs. 'Smokers') also improved their MCS score at 4-months ($M \text{ diff.}=13.6, t(223)=2.7, p_{\text{adj}}=.02$) but effects were not sustained at 6-months. 'Late Quitters' (vs. 'Smokers') improved their MCS score though not significantly ($M \text{ diff.}=11.9, t(226)=2.3, p_{\text{adj}}=.07$).

Among smokers with chronic MIs, quitting smoking is associated with marked improvements in physical HR-QoL regardless of MI severity; however, this effect is not observed among those with depression. For mental HR-QoL, marked improvements are observed regardless of depression or MI severity, and the positive effects of quitting are apparent even among late quitters who had been abstinent for two months.

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RELATIONSHIP FUNCTIONING AS PREDICTOR OF CONDOMLESS SEX AMONG A SAMPLE OF SEXUAL MINORITY ADOLESCENT MALES

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Background: In 2017, youth (aged 13 to 24) made up to 21% of the new HIV diagnoses in the United States and 87% of those occurred in male youth. Nearly 50% of sexual minority adolescent males (SMAM) do not routinely use condoms. Main relationship partners account for a substantial proportion (as many as 79%) of new HIV infections among sexual minority men. For partnered sexual minority men, positive relationship functioning (e.g. high satisfaction) may be associated with instances of condomless sex (CS), though no studies to date have examined this association in SMAM.

Methods: Adolescents aged 15 and 19 were recruited nationally via online social media advertisements and geo-networking applications, and completed a brief telephone interview as part of ATN156. Analyses utilized data from 85 SMAM who reported being sexually active and who were in a current relationship. Participants were on average 18.03 years old (SD = 1.04), majority Latinx (42.9%) or White (32.4%), and identified as gay (77.5%) or bisexual (22.5%). Two independent logistic regression analyses were conducted to examine the association between relationship functioning and CS in the past 90-days among 1) all sexually active SMAM and 2) sexually active SMAM with a history of CS ($n = 70$). All analyses controlled for age, sexual identity, geographic region, and race and ethnicity.

Results: Relationship functioning was only associated condom use among those with a previous history of CS. Greater relationship satisfaction was associated with a lower likelihood of CS (OR = 0.56, 95%CI: 0.32, 0.98). Neither perceptions of seriousness or commitment to their relationship were associated with condomless sex.

Discussion: Consistent with the adult literature, the findings from the current study support that relationship functioning, specifically relationship satisfaction, is associated with sexual health risk among SMAM. This finding has important clinical and/or policy implications. Specifically, relationship skills training should be included in sexual health education programing as relationship functioning is inherently related to HIV prevention.

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TESTING THE GENERALIZABILITY OF THE DRUG USE AND CONDOMLESS ANAL SEX LINK AMONG SEXUAL MINORITY MEN

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Background: The link between drug use – particularly “club drugs” (cocaine, methamphetamine, GHB, LSD, ecstasy, and ketamine) – and sexual HIV risk behavior is well-documented among sexual minority men (SMM). Less consideration has been given to marijuana. In addition, few studies have tested whether this association differs among single SMM vs. those in relationships. For many partnered SMM, sexual agreements place limits on sexual behavior with outside partners and expectations about HIV prevention, and monogamous SMM are less likely to use club drugs. Accordingly, we tested whether these factors may diminish the strength of associations between drug use and condomless anal sex (CAS) with casual partners.

Methods: Between 11/2017 and 9/2019, 60,108 cis-gender SMM were recruited through a mobile dating app ($M_{age} = 36.2$ years) and completed an online survey. The majority were White (55.1%), in a relationship (84.3%), identified as gay (85.4%), and HIV-negative (79.6%; of whom 22.5% were on PrEP). Participants provided demographic data and indicated whether they used marijuana and 6 club drugs (in the previous 90 days) as well as the number of times they had CAS with a casual partner. Partnered SMM indicated their sexual agreement. A hurdle model was calculated to predict the odds of any CAS and CAS frequency among those who reported it. Models included interaction terms between relationship status and drug use and controlled for race and ethnicity, age, HIV status, and PrEP uptake.

Results: Club drug use (OR = 2.64, $p < .001$) was positively associated with the odds of CAS among single and non-monogamous men, but not monogamous men. Marijuana use (OR = 1.43, $p < .001$) was positively associated with the odds of CAS among single and monogamous men, but not non-monogamous men. Club drug use (Rate Ratio = 2.10, $p < .01$) was positively associated with CAS frequency among single and non-monogamous men who had at least some CAS, but not among monogamous men. Marijuana use was not associated with CAS frequency in any group.

Conclusions: These findings highlight the relevance of marijuana use to sexual risk-taking – for at least some groups of SMM. They also suggest that links between drug use and CAS generalize to at least some subgroups of partnered SMM. These findings point to the utility of incorporating a focus on marijuana use in intervention development and epidemiological research focused on sexual health and also of developing drug use interventions to reduce HIV transmission risk among partnered (as well as single) SMM.

Learning Objectives: Participants will be able to describe the links between marijuana and HIV risk behavior, and between club drugs and HIV risk behavior in a large sample of SMM.

Participants will be able to delineate between these drug-sex associations depending on relationship status and sexual agreement among SMM.

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MEAN LEVEL AND VARIABILITY OF POSITIVE AFFECT AND SLEEP QUANTITY AMONG MOTHERS.

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Background: There is growing interest in the contribution of emotional factors to sleep health. However, much of the research in this area focuses on how trait and/or mean levels of affect influence sleep quantity. The extent to which within-person variation in affect relates to sleep quality and quantity is understudied due to methodological limitations such as lack of real-time data capture measures and statistical models incapable of testing within-subject variability as a predictor. Mothers represent a particularly vulnerable population for experiencing affective volatility given the demands of parenting, and therefore the association between affect and sleep health is an important question to understand in mothers. This study used intensive repeated Ecological Momentary Assessment (EMA) data to examine the associations between mean level of and variability in positive affect (PA) and sleep quantity in mothers.

Methods: This study examined panel data from mothers (Mean = 41.40; SD = 5.98) with children (ages 8-14 years) in the Mothers' and Their Children's Health (MATCH) study. Mothers were assessed six times across three years (every six months). During each assessment wave, mothers completed 8 days of EMA, reporting up to 8 randomly-promoted times per day on how happy and calm/relaxed they were feeling. Mothers' typical weekday sleep duration was measured through self-report questionnaire at each assessment. Data were divided into two sub-data sets (waves 1-3 and waves 4-6) to run an initial test and replication of the results, respectively. The analytic sample size was about 9,000 observations (level 1: prompts) nested within 152 mothers (level 2: persons) in each sub data set. This study employed a novel two-stage data analysis approach, multilevel mixed-effects location scale modeling, using the statistical program MIXWILD.

Results: Results indicated that mean level of PA (i.e., location effect) was positively associated ($\beta = 0.157$ & 0.187 , p 's < 0.05) with mothers' weekday sleep duration time in both sub-data sets. Variability in PA (i.e., scale effect) was inversely related to weekday sleep duration in the first sub-data set (waves 1-3) ($\beta = -0.238$, $p < 0.01$) and not significantly associated with sleep duration in the second sub-data (waves 4-6) ($\beta = -0.017$, $p = 0.85$), although the effect was in the expected direction.

Conclusions: Mothers with higher mean levels of positive affect may sleep longer on weekdays because positive emotions buffer the effects of stress or support goal-directed behaviors such as getting to sleep on time. However, results indicate that volatility in positive affect may influence sleep duration above and beyond the effects of mean positive affect. Therefore, emotional regulation strategies may be important to target in sleep health interventions for parents.

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EARLY RESULTS FROM AN ONGOING TRIAL OF A NOVEL METHOD TO DISCONTINUE HYPNOTIC MEDICATION AMONG CHRONIC USERS

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Background: Efforts to discontinue hypnotic use have mixed results and typically have not addressed placebo effects (e.g., cognitive expectancy for nightly use). We developed a method for reducing cognitive expectancy for hypnotics and created the Masked Taper plus Cognitive behavioral therapy Augmented Program (MTcap). MTcap includes 1) masked (i.e., blinded) hypnotic tapering, which is achieved through encapsulation of the hypnotic, 2) components targeting placebo and psychological effects of withdrawal, and 3) cognitive behavioral therapy for insomnia (CBTI), which is considered first-line therapy for insomnia. Using data from an ongoing clinical trial examining the effects of MTcap, we explored a method of describing expectancy for hypnotic effects, comparing participant predicted to actual hypnotic dose among chronic hypnotic users randomized to MTcap.

Methods: We analyzed daily diary data from participants who completed MTcap between March 2019-September 2019. Data included predicted nightly hypnotic dose as a percentage of baseline dose (5 options in 25% increments where 0% = no dose/placebo to 100% = full dose) and self-reported Sleep Quality (SQ; 0 = poor to 10 = excellent). We defined prediction accuracy as "over" (prediction > actual dose), "under" (prediction < actual), and "accurate" (prediction = actual). Expectancy profile was determined by the percentage of days participants' predictions were over, under, or accurate.

Results: All participants (n=8, mean age = 70 years) completed MTcap, yielding 63-70 days of data per participant. Three distinct expectancy profiles emerged. The "generally accurate" group correctly predicted the dose most days (n = 3; 46%, 46%, 68% of days). The "generally over" group overpredicted the dose most days (n = 4; 86%, 86%, 71%, 67% of days). The "generally neutral" group had a non-dominant pattern (n = 1). All participants successfully discontinued hypnotic use after completing MTcap. Six participants reported improvements in SQ over the course of intervention as hypnotic dose was tapered; accuracy in dose prediction was not associated with change in SQ.

Conclusion: Our approach to categorizing prediction accuracy helped identify expectancy profiles that may be associated with reduced cognitive expectancy and successful discontinuation of hypnotics. Future analyses from the larger trial will refine methods of investigating expectancy patterns and potential relations to changes in sleep and hypnotic use.

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INSOMNIA IDENTITY AND PSYCHOSOCIAL HEALTH IN NURSES

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Introduction: Insomnia identity (i.e., the belief or complaint that one has insomnia) can be measured independently of actual sleep disturbances, resulting in four categories of sleepers: complaining poor (CP), non-complaining poor (NP), complaining good (CG), and non-complaining good (NG). Preliminary research has demonstrated insomnia identity is linked with mental health and daytime functioning variables more strongly than actual sleep disturbances. The current study sought to extend these findings in a large sample of nurses.

Method: Participants were 389 nurses (92% female; 78% White, 11% Hispanic/Latinx; mean age = 39.5 ± 11.1) from two local hospitals. Participants completed baseline measures of depression, anxiety, posttraumatic stress disorder (PTSD) symptoms, perceived stress, chronotype, and night-shift work, and then completed 14 days of sleep diaries. Participants were categorized into 4 types of sleepers (CP, NP, CG, NG) using sleep diaries (good v. poor sleepers; i.e., 31 or more minutes of wakefulness during sleep period, at least 3x/week) and self-report measures (insomnia complaint v. no complaint; i.e., poor subjective sleep quality as measured by the Pittsburgh Sleep Quality Index).

Results: NG sleepers were the largest category ($n = 318$) followed by NP ($n = 34$), CG ($n = 25$) and CP ($n = 12$). Significant differences emerged between groups for depression, anxiety, PTSD symptoms, and chronotype. CP had significantly higher depression, anxiety, and PTSD symptoms than NG. CG had significantly higher depression and PTSD symptoms and greater evening chronotype tendency than NG. Sleeper category was not associated with night shift work status.

Discussion: Supporting previous research, results indicated individuals endorsing insomnia identity (i.e., insomnia complaint) demonstrated worse psychosocial health compared to individuals who did not endorse insomnia identity, regardless of actual sleep disturbances (i.e., good or poor sleep). One explanation for this is that concern or worry about sleep may be more harmful to psychosocial health than having poor sleep. Future research should aim to understand the mechanisms of the relationship between sleeper category and psychosocial variables and explore additional outcomes (e.g., physical health). Given that nurses provide the front line of care in hospitals and other medical settings, it is essential to understand modifiable factors that contribute to their psychosocial health and wellbeing.

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DOES GENERAL SELF-EFFICACY BUFFER THE EFFECTS OF STRESS ON SLEEP?

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Research strongly supports the link between high stress and poor sleep quality. Ethnic minority populations are typically more vulnerable to higher levels of stress. Furthermore, ethnic minorities enrolled in college report higher levels of stress than non-minority students. General self-efficacy (GSE), defined as the belief in one's ability to perform difficult tasks and cope with adversity, is a psychosocial resource that can be useful in combating stressful situations. There have been few studies on GSE in the context of stress and sleep, and none have focused on minority samples. This study explored whether GSE buffered the effects of stress on sleep in an ethnically diverse sample of young adults enrolled at a 4-year university. Cross-sectional data were collected on 345 participants (68% Latino, 13% Black, 7% Asian, 5% White, 2% Pacific Islander, 5% Multiracial). In a model adjusted for sex and age, greater sleep problems were significantly predicted by higher stress, GSE, and the stress-GSE interaction, $F(5, 338) = 18.08, p < .001, R^2 = .20$. The main effect for stress was statistically significant ($b = .474, p < .001$), but the main effect for GSE was not ($b = .087, p = .312$). The significant interaction term ($b = -.019, p = .012, \Delta R^2 = .01$) was probed at low, medium, and high levels of GSE. All simple slopes were statistically significant ($ps < .001$); the stress-sleep relationship was weakest for those who were high in GSE ($b = .384$), and respectively stronger for those who were average ($b = .474$) or low ($b = .565$) in GSE. These findings suggest that higher GSE may buffer the effects of stress on sleep in this sample of ethnically diverse young adults. Furthermore, this buffering effect may work on a gradient. These findings are of theoretical interest because they advance the body of knowledge on stress and sleep by exploring the role self-efficacy plays in this relationship. An applied benefit of this study is GSE's potential as a modifiable psychosocial resource. Future research should explore approaches for enhancing GSE in this population and evaluate whether changes in this broad construct reflect the buffering pattern observed in the current sample. Potential avenues for this within the university context may include culturally competent curricula, mentorship, and/or other personal development programs aimed at promoting the skills and beliefs associated with GSE.

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SLEEP AS A LONGITUDINAL PREDICTOR OF RISK FOR METABOLIC SYNDROME AND VISCERAL FAT ACCUMULATION IN COLLEGE FRESHMEN

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Introduction: While an estimated 50-70 million adults experience chronic sleep loss, college students may be twice as likely as the general population to report negative sleep outcomes. Poor sleep has been linked to a number of deleterious health outcomes, including metabolic syndrome (MS), which elevates one's risk of developing conditions like diabetes, heart disease, and stroke later in life. Mixed results have been found as to whether sleep can predict accumulation of visceral fat, which is biologically active fat that is associated with inflammation and obesity. An increased number of college students are meeting an overweight or obese classification, which gives rise to concerns regarding accumulation of visceral fat and developing risk for MS. Weight gain in college students, especially early on, is often labeled "The Freshman 15". The present study examined multiple longitudinal relationships between sleep and risk for MS, visceral fat, and whether visceral fat mediates the relationship between sleep and MS risk.

Method: Participants consisted of college freshmen recruited for a longitudinal study measuring subjective and objective sleep, metabolic health, and body composition (as measured by a DEXA scanner). Time 1 data (N = 131, M = 18.45 years; 60.1% female; 57.2% white) were collected during participants' fall semester, and time 2 data (N = 33, M = 18.59 years; 72.7% female; 56.8% white) were collected during spring semester.

Results: Lower subjective sleep duration ($b = -.29, p < .05$), lower objective sleep duration ($b = -.20, p < .05$), poorer subjective sleep quality ($b = .17, p < .01$), and poorer objective sleep quality ($b = -.20, p < .05$) at time 1 were significantly associated with greater risk for MS at time 2. These effects were present after controlling for age, gender, socioeconomic status, sleep apnea, depression, and stress. Sleep did not significantly predict visceral fat in a linear fashion; however, a significant curvilinear relationship existed between sleep duration and visceral fat cross-sectionally, such that sleeping less than 6 hours ($b = .25, p < .05$) and more than 6 hours ($b = .15, p < .05$) was associated with more visceral fat. Lastly, sleep outcomes predicting risk for MS via visceral fat were not significant.

Conclusion: Results suggest that sleep has the potential to influence risk for MS among college students, a population typically thought to not be at great risk for MS. This serves as a potential avenue for interventions geared at improving sleep (i.e., improving sleep hygiene practices, CBT-I) in order to establish a preventative strategy against negative metabolic health outcomes. Future research should continue to explore the link between sleep and metabolic health in college students, with an emphasis on increasing longitudinal sample size and further elucidating the link between sleep and visceral fat.

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FEASIBILITY OF A NOVEL BEHAVIORAL SLEEP EXTENSION INTERVENTION FOR SHORT SLEEPERS WITH ELEVATED BP/HYPERTENSION

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Short sleep duration contributes to increased cardiometabolic disease risk, including hypertension and heart disease yet few studies have examined behavioral sleep extension interventions. The goal of our study was to evaluate the feasibility and preliminary efficacy of a behavioral sleep extension intervention among individuals with elevated BP/hypertension on sleep, blood pressure and patient reported outcomes.

Methods: Adults aged 30-65 with 24h ambulatory blood pressure (ABP) >120/80 mmHg and average weekday sleep duration < 7 h per night were randomized 2:1 to a 6-week behavioral sleep extension intervention versus a self-management control group. The intervention included a wearable sleep tracker, weekly educational content and brief telephone coaching to enhance adherence. The control group was provided with sleep education and instructed to maintain their current sleep schedule. Data were analyzed using descriptive statistics and non-parametric statistics to evaluate differences in between groups as well as pre-post changes within each group. We also conducted bivariate correlations to evaluate predictors of change in sleep and ABP.

Results: A total of 16 adults were randomized into the study (11 intervention, 5 control group, 8 women, M=45.8 SD=9.8 years.) Results at 6-week follow-up demonstrated greater improvement in the intervention group for sleep duration ($p=.027$), reductions in 24h Systolic BP ($p=.013$) and Diastolic BP ($p=.026$), improvements in self reported sleep disturbance ($p=.003$) and sleep related impairment ($p=.008$). Improvements sleep duration were correlated with increased time spent in bed and sleep efficiency. Participants in the intervention group completed 90% of the coaching sessions and rated the enjoyment of the intervention as 4 of 5 out of 5 and reported in particular the use of the wearable tracker was an important component.

Conclusion: results demonstrate that sleep extension intervention is feasible and the intervention was well-received. Results also demonstrate the potential for this intervention to improve sleep duration, quality and 24-h ABP.

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EDUCATIONAL GRADIENT IN DIABETES PREVALENCE AMONG FOREIGN BORN ASIAN AMERICANS: IMPLICATIONS FOR HEALTH INTERVENTIONS

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Educational Gradient in Diabetes Prevalence among Foreign Born Asian Americans: Implications for Health Interventions

Purpose: Educational gradients in diabetes prevalence are pronounced in the United States (U.S.). However, little research exists examining if this gradient holds in Asian Americans, one of the fastest-growing immigrant groups in the U.S. with varying levels of education. We examined educational gradients in diabetes prevalence among foreign born Asian American adults, who represent 80% of all Asian Americans and tested if associations differed by length of stay in the US.

Methods: We used the 2011-2016 National Health and Nutrition Examination Survey (NHANES), a nationally representative sample of the U.S. population that included foreign-born Asian American adults 20 years of age or older ($n=1,762$). Education was classified as < high school, high school, some college, and college degree or more. Diabetes prevalence was clinically assessed using a glycohemoglobin (HbA1c) cut-off of 6.5%. In multivariate logistic regression models that accounted for the multistage sampling design of the NHANES, we examined if educational gradient and HbA1c level remained associated after adjusting for gender, age, income and body mass index (BMI). We also tested for effect measure modification by years in the U.S. (< 10 years vs. 10+ years).

Results: Diabetes prevalence decreased with increasing education (p for trend < 0.05), reaching 22.0% among those with < high school education compared to 7.8% among college educated individuals. In crude models, compared to college educated individuals, those with < high school education had a higher odds of diabetes (Odds Ratio [OR]: 3.32, 95% Confidence Interval [CI]: 2.37-4.64). This association was significantly attenuated after adjusting for age, gender, and household income. Although results were non-significant, there were reversed patterns of association by length of stay in the U.S.: odds of diabetes was highest for those with low education among those living in the U.S. < 10 years only.

Conclusion: There was a clear education gradient in diabetes prevalence among foreign-born Asian Americans and suggested variability by length of stay. Future research should consider the role of education and nativity status in this population to reduce diabetes risk and improve diabetes management.

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EFFECTS OF RESIDENTIAL RELOCATION ON SYSTOLIC BLOOD PRESSURE AND PSYCHOSOCIAL WELLBEING

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Background: Moving or moving frequently is associated with higher rates of cardiovascular disease (CVD) and mortality. A plausible mechanism by which residential relocation may impact health is through disrupting established social networks. Social relationships have a large influence on long-term health outcomes, but it is not clearly established whether or how social disruption resulting from a relocation influences short-term health. This pilot study examines whether moving to a new city is associated with increased CVD risk, and whether the extent to which movers rebuild their social network after relocating predicts improved CVD risk and psychosocial wellbeing.

Methods: Two participant groups were recruited: healthy adults who had moved to the city of Vancouver, Canada in the previous 6 weeks ("movers", $n = 26$, 13 male, $M = 30.62$ years, $SD = 7.35$) and age-matched healthy adults who had lived in Vancouver for at least 5 years ("non-movers", $n = 20$, 7 male, $M = 31.45$ years, $SD = 7.10$). Data were collected at 2 timepoints: at the beginning of the study (T1) and 3 months later (T2). At each timepoint, measures of participants' social networks, psychosocial wellbeing, and blood pressure were obtained at a lab visit.

Results: Visual inspection of the data revealed that the upper quantile, median value, and lower quantile of systolic blood pressure for the movers were all higher than those of the non-movers. A regression analysis controlling for age, gender, and waist-to-hip ratio indicated a statistical trend for movers to have higher systolic blood pressure at T1 ($M = 107.42$, $SD = 11.39$), compared to non-movers ($M = 102.37$, $SD = 10.03$), $\beta = .25$, $t(40) = 1.73$, $p = .092$. Further regression analyses revealed that among movers, increases in social network size over a 3-month period predicted decreases in systolic blood pressure, $\beta = -.70$, $t(14) = -3.34$, $p = .005$, controlling for covariates. There were also trends for increases in movers' social network size to predict decreased stress, $\beta = -.44$, $t(17) = -2.03$, $p = .058$, and decreased depression, $\beta = -.41$, $t(17) = -1.86$, $p = .081$, at the 3-month follow-up.

Conclusions: This pilot study provides preliminary evidence for increased systolic blood pressure, a marker of CVD risk, among recent movers and suggests that this increased risk is mitigated by the extent to which individuals rebuild their social network in the months following their relocation. The findings indicate that large-scale longitudinal research on the effects of residential relocation and social integration into a new community on physical health is warranted.

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EFFECT OF A DIGITAL MINDFULNESS INTERVENTION ON NEGATIVE AND POSITIVE AFFECT: DOES EARLY LIFE ADVERSITY MATTER?

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Individuals exposed to adverse childhood experiences are more likely to experience poor psychological functioning, including persistent reports of negative affect. Mindfulness meditation interventions can be effective in reducing negative affect and improving positive affect; however, it is unknown whether early life adversity moderates this effect. In the current analysis, we examined this question in a rigorous digital mindfulness RCT among employees at a large public university.

This study included participants with moderate-to-high levels of perceived stress (Perceived Stress Scale score greater than or equal to 15) who denied a regular sitting meditation practice. Participants were randomly assigned to one of two conditions: digital mindfulness meditation (n=508) or waitlist control (n=534). Participants in the intervention group were given access to the online application (HeadspaceTM) and asked to complete 10-minute meditation sessions daily for 8 weeks. We assessed early life adversity (e.g., trauma, abuse, household dysfunction) using the Adverse Childhood Experiences (ACE) Questionnaire, and positive and negative affect with the State Affect Scale at baseline and 8-week post randomization. In this analysis we tested the effects of treatment on changes in negative and positive affect as well as the moderating effect of ACE score.

Analyses revealed, as expected, participants who reported a greater trauma history (i.e., higher ACE score) reported at baseline greater negative affect ($r=0.16$) and lower positive affect ($r=-0.12$). With respect to treatment effects, those randomized to the digital meditation showed greater decreases in negative affect ($p<.0001$) and greater increases in positive affect ($p<.0001$) at follow-up compared to waitlist. However, ACE scores, which ranged from 0 to 10 in this sample, did not moderate either of these effects.

These results from this trial indicate that while randomization to the digital meditation condition resulted in a reduction in negative affect and improvements in positive affect, this did not vary as function of ACE score. This suggests that digital meditation is similarly effective regardless of prior trauma history. This is important as digital mindfulness meditation is easily accessible, and thus a scalable method for improving psychological well-being.

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IMPROVING QUALITY OF LIFE AND MENTAL HEALTH OF A LOW INCOME COMMUNITY IN A COLOMBIAN CITY: AN EVIDENCE-BASED INTERVENTION

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Background: La Cruz neighborhood is located in the peripheral area of Medellín City and it mostly consists of national migrants that were forcefully displaced from their original homes. The majority of its inhabitants have low socioeconomic status and earn formal or informal salaries below minimum wage. The neighborhood has a small school and few recreational spaces, among those a small library called “Sueños de Papel”. The purpose of this study was to assess the impact of the creation of the library and an evidence-based intervention (EBI) developed according to the needs this specific community presented.

Method: Stage 1 consisted of measurement taking in order to diagnose and evaluate the needs present in the community. In this stage we evaluated 34 people that had visited the library and 49 that hadn't. Upon this results we proceeded to design promotion and prevention programs, based on different behavior change models (Protection Motivation Theory, Reasoned Action Approach). Stage 2 consisted of the application of these programs during the second semester of 2018 and the first semester of 2019. Subjects treated during these workshops were: prevention of violence towards women, sexual education, social media management, promotion of secure attachment, parenting styles and first aid. On stage 3, during the second semester of 2019 posttest measurements were taken in order to evaluate the workshop and library's impact on the community.

Results: showed a statistically significant increase in the personal development scale (Wilcoxon = 248.50, $p < 0.05$); and non-significant increase in the other scales of Quality of Life. Regarding neighborhood perception, statistically significant changes in safeness (Wilcoxon = 2032.50, $p < 0.05$), social change (Wilcoxon = 1937.50, $p < 0.05$) and total test score (Wilcoxon = 2264.00, $p < 0.01$). Finally, a decrease in depression (Wilcoxon = 986.00, $p < 0.01$) and its prevalence from 28.9% a 9.6%. Anxiety did not present any changes.

Conclusion: The creation of a common space in this type of communities can provide a gathering place for inhabitants and a space that can be used for EBIs, which did not exist previously in the neighborhood. Additionally, given the urgency and characteristics of this type of communities EBIs can be considered a very effective and reliable way to intervene problematic issues within them.

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EFFECTS OF AUTONOMY SUPPORT, DIET AND EXERCISE SUPPORT, & ACCOUNTABILITY ON WEIGHT LOSS OUTCOMES IN A TRIAL INVOLVING LAY COACHES

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Social factors, such as Autonomy Support (AS) and Diet and Exercise Social Support (Diet/Exercise SS), are known to facilitate weight loss. AS is defined as providing options, empathy, and information to foster behavior change. Diet/Exercise SS are defined as receipt of help and positive reinforcement from social contacts for healthy eating and activity, respectively. Notably, accountability (feeling responsible to others) has not been explicitly examined for weight loss. The purpose of this study was to determine the relative contributions of AS, Diet/Exercise SS, and Accountability on behavioral weight loss (BWL) outcomes. Further, given that these constructs have never been simultaneously examined within the lay coach literature, we investigated whether individuals assigned lay coaches (vs. not) report higher levels of these social influence factors. Data for this study are from a randomized BWL trial examining the effects of lay coaches. All participants (N=278, 75.9% female, 51.8±5.6 years) received a 12-month group BWL program and were randomized to a peer coach (two individuals actively trying to lose weight and supporting one another), mentor coach (successful weight losers who support individuals just starting to lose weight), or no coach. AS, Diet/Exercise SS, and Accountability for weight management were assessed using valid and reliable measures. Weight was objectively assessed. Collapsing across treatment arms, results showed that improvements in AS, Diet SS, and Accountability from treatment start to 12-month predicted 12-month weight losses ($p < .02$), and the relative contribution of each was similar (variance explained was small and ranged from $R^2=0.04-0.07$). In terms of treatment arm differences, the mentor arm had significantly greater improvements in accountability during treatment (Mentor: +0.5±1.8) compared to the peer and no coach arms (Peer: -0.3±1.9, No Coach: -0.4±2.0, $p = .003$), with peer and no coach not significantly different from one another ($p = 0.31$). Similarly, the mentor arm had the greatest increase in Diet SS during treatment, followed by the peer arm, and then the no coach arm ($p < .03$; Mentor: +1.2±0.9, Peer: +0.9±0.8, No Coach: +0.5±0.9). Results suggest that AS, Diet SS, and accountability are key social factors associated with improved BWL outcomes. The addition of lay coaches to BWL treatment is a promising strategy for increasing perceived support and accountability over time.

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RELATIONSHIP BETWEEN SOCIAL NETWORKS AND FEELINGS OF LONELINESS DURING PREGNANCY

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Objective: Evidence garnered over the last 30 years suggests that both social isolation (objective number of social relationships and frequency of contact) and loneliness (the perception that one's social needs are not being met by the quantity or quality of one's social relationships) are detrimental to one's psychological, emotional and physical health. Most of this research has been conducted in adults and less is known about the influence of social relationships during pregnancy. This longitudinal study examines the relationships between social network size (number of relationships), social network density (interconnections between ties in the network) and feelings of loneliness during pregnancy.

Methods: Pregnant women completed study measures once during their first trimester (dating ultrasound, 20 gestational weeks) and again in their third trimester (28-40 weeks). Study measures included interviews and questionnaires assessing characteristics of their social networks (e.g., size and density) and feelings of loneliness (UCLA Loneliness Scale). A linear regression was used to analyze associations between social network size, density and maternal loneliness at each time point. Models controlled for participant's baseline age, race/ethnicity, insurance type, and relationship status.

Results: A total of 94 pregnant women (mean age=23.77, 70.2% Black, 87.2% public insurance, 83% in a relationship/married) completed both assessment time points. Social network size (number of relationships named) during the first trimester did not predict maternal loneliness during the first (= -0.078, 95%CI -0.094-0.087, $p = 0.938$), or third trimester (= 0.754, 95%CI -0.073-0.161, $p = 0.454$); however, mothers' social network density (interconnections between ties in the network) was inversely related to maternal loneliness during the first trimester (= -2.163, 95%CI -3.929-0.165, $p = 0.033$), but not during the third trimester (= -2.73, 95%CI -2.814-2.140, $p = 0.786$).

Conclusions: Social network density was significantly associated with maternal loneliness only in the first trimester of pregnancy. Size and density of social networks do not predict loneliness in the third trimester. Future studies are needed to understand the relationship between social networks attributes, loneliness and perinatal outcomes.

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EXPLORING THE INTERACTIVENESS OF THE SOCIO-ECOLOGICAL MODEL'S LEVELS FOR PHYSICAL ACTIVITY IN GERMAN YOUTHS

Carina Mnich, BA¹, Claudio Nigg, PhD¹, Darko Jekauc, n/a², Hagen Wäsche, n/a¹, Steffen C. Schmidt, n/a³, Alexander Woll, Professor⁴¹Karlsruhe Institute of Technology, Karlsruhe, Baden-Württemberg, Germany; ²Karlsruhe Institute of Technology, Institute for Sports and Sport Science, Karlsruhe, Baden-Württemberg, Germany; ³Karlsruhe Institute of Technology, Karlsruhe, Baden-Württemberg, Germany; ⁴Karlsruher Institut of Technology, Karlsruhe, Baden-Württemberg, Germany**Background:** Socio-ecological models (Sallis et al., 2008) have been commonly used to inform physical activity (PA) interventions, targeting the individual, social, community, environment, and policy level. While each of these levels has been associated with PA, less is known about the interaction between them. Thus, this study investigated 1) to what extend model components predict PA and 2) how the components interact over time.**Methods:** Data was obtained of the German national representative MoMo Cohort Study waves 1 and 2 (T1: 2009-2012; T2: 2015-2017). Participants filled in validated questionnaires assessing PA enjoyment and physical self-concept (individual level), social support and socio-economic status (SES) (social level), PA environment and community size (environment level), and PA T2. A path panel prediction model was set-up in three steps: Model 1: T1 variables predicting PA, Model 2: T1 and T2 variables predicting PA, Model 3: adding cross-lags between T1 and T2 variables (e.g. between community size and social support).**Results:** 1,457 participants were included in the analysis (55.1% female, AgeT1=15.60 [SD=3.50], AgeT2=20.83 [SD=3.64]). Model 1 showed a bad model fit ($\chi^2=146.0$; $df=12$; $p<.01$; CFI=.889; RMSEA=.088; $R^2=15.8$). In Model 2, model fit and explained variance improved by adding T2 variables ($\chi^2=360.4$; $df=54$; $p<.01$; CFI=.948; RMSEA=.062; $R^2=30.3$). Explained variance slightly improved by adding the cross-lags in model 3 ($\chi^2=243.9$; $df=25$; $p<.01$; CFI=.963; RMSEA=.078; $R^2=32.2$). Stability paths were added from T1 to T2 variables. Cross-variable interactions within the model's levels were found for: community size predicting PA environment ($b=.09$), SES predicting social support ($b=.07$), and enjoyment predicting physical self-concept ($b=.12$). Cross-level interactions across the model's levels were found for PA environment ($b=.07$) and social support ($b=.07$) predicting enjoyment, SES ($b=.04$) and social support ($b=-.06$) predicting community size, physical self-concept predicting SES ($b=-.09$), and enjoyment predicting social support ($b=.07$). In all models, significant PA predictors were only found on the individual and social level.**Conclusion:** Adding cross-lags into the prediction models helps to understand the directions of social-ecological inter-level relationships. The findings indicate that the lower levels are more likely to influence the higher levels. Possible explanations include the individual agency and the actor's influence on his/her social and/or physical environment. However, these findings need to be replicated and confirmed, using other samples, behaviors, and variables.

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HOW DOES STIGMA INFORM SEXUAL AND GENDER MINORITY HEALTH INTERVENTIONS? A SYSTEMATIC REVIEW

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populations. Eligible studies were peer-reviewed, published in English from 2003 onward, and reported empirical results of a behavioral or psychological intervention that address stigma and were implemented among SGM populations.

Results: We identified 37 interventions, most of which were conducted among sexual minority men ($n=28$). Most interventions were tailored or adapted for the unique needs of SGM ($n=28$). The majority ($n=26$) targeted proximal stigma (e.g., internalized, anticipated). Fewer ($n=20$) addressed distal stigma (e.g., enacted, structural). Eleven studies addressed stigma in the content of the intervention, but did not directly measure or intervene on stigma as an outcome. The most common targeted outcomes were HIV transmission ($n=20$), health among people living with HIV ($n=4$), and mental health ($n=7$). Interventions rarely examined stigma as mediating or moderating intervention effects ($n=5$). Seventeen interventions applied an intersectional framework or targeted additional sources of stigma beyond SGM stigma.**Conclusion:** Interventions are increasingly considering health disparities within the context of stigma. Future research should explore whether stigma affects the efficacy of currently existing psychological and behavioral interventions. Further, interventions may benefit from an intersectional approach to examining SGM stigma. The majority of interventions in our review focused on cisgender sexual minority men, with few considering intersecting sources of stigma related to racial/ethnic or gender minority status. Application of an intersectionality framework will be important for intervention development that effectively targets multiple, intersecting sources of stigma among SGM communities.

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FACETS OF SOCIAL SUPPORT AND SEDENTARY BEHAVIORS: PROSPECTIVE FINDINGS IN MOTHER-CHILD DYADS

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Background: There is an abundance of evidence for the significant associations between facets of social support, social control, and behavior change, especially in eating and physical activity area (Edwardson & Gorley, 2011). However, the majority of research focused on within-individual associations, whereas dyadic effects are less clear. The aim of this study was to investigate prospective associations between received and provided collaborative social control, social support and social support satisfaction and the outcome variables, sedentary behaviors (SB) and the number of active breaks in mother-child dyads.

Method: Data from mother-child dyads ($N = 107$; maternal $M_{age} = 41.1$, child $M_{age} = 11.4$) were collected at the baseline (Time 1; T1) and at the 1-month follow-up (Time 2; T2). Mothers and children reported their SB, the number of active breaks, and social support/control variables. Path analysis was performed to test the hypothesized associations.

Findings: Path analysis indicated that received collaborative social control (reported by children; T1) predicted a higher number of active breaks in children (T2). In turn, received social support (reported by children; T1) predicted a lower number of active breaks among children (T2). Additionally, received collaborative social control and received social support reported by children (T1) predicted on child support satisfaction (T2). There were no dyadic (parent-child) effects.

Discussion: Although within-person effects were found for children, the hypothesized dyadic effects were not confirmed. The positive effect of collaborating social control, accompanied by a negative effect of received support on the number of active breaks, may be explained by the reactance effect.

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CROSS-SECTIONAL EXAMINATION OF FOOD INSECURITY WITH BEHAVIORAL AND PSYCHOSOCIAL FACTORS AMONG RESIDENTS OF PUBLIC HOUSING

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¹Boston University, Boston, MA; ²UMass Boston, Boston, MA; ³Boston University, Brighton, MA; ⁴Boston University School of Public Health, Boston, MA; ⁵Boston Medical Center, Boston, MA; ⁶Boston Medical Center, Hyde Park, MA; ⁷Boston Housing Authority, Boston, MA

Background: There may be associations between those who experience food insecurity, diet/sleep behaviors, and psychosocial/physical factors, information which could help design effective weight management programs for low-income populations.

Purpose: To examine differences in behavioral, psychosocial, and physical factors between those who were food secure compared to food insecure among public housing residents who were overweight/obese.

Methods: Data were from the baseline survey of a randomized controlled trial of a weight management intervention. Food insecurity, behavioral factors, including diet and sleep, and other psychosocial and physical factors, including perceived stress, sleep, social support, and physical symptoms, were measured via interviewer-administered screeners.

Results: Mean age of the sample ($n=102$) was 46.5 years ($SD=11.9$). The majority were Hispanic (67%), female (88%), with high school degree (62%). Nearly half were food insecure (48%). Compared to the food secure group, food insecurity was not significantly associated with a diet composite score nor intake of sugar sweetened beverages. For psychosocial variables, those who were food insecure had higher ratings of perceived stress (adjusted mean difference 3.39, 95% CI:2.00,4.79) and lower social support (adjusted mean difference -0.70, 95% CI:-1.36,-0.11) compared to those who were food secure. For behavioral and physical variables, those who were food insecure had lower odds of feeling rested often/very often (aOR 0.42, 95% CI:0.18,0.98) and higher odds of reporting negative physical symptoms (aOR 4.92, 95% CI:1.84,13.16).

Conclusions: Among this sample of public housing residents, food insecurity was associated with poor sleep, higher stress, higher experiences of physical symptoms, and lower social support. Intervention planners targeting food insecurity among residents of public housing should consider assessing and addressing multifactorial challenges faced by low income residents, taking into account possible contributing factors such as stress, social support, and sleep difficulties.

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EFFECTS OF DIGITAL MINDFULNESS INTERVENTION ON MENTAL HEALTH AND WORK STRESS: PRELIMINARY FINDINGS FROM THE STRESS FREE UC STUDY

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Introduction: Work-related stress is highly prevalent and contributes to poor mental and physical health. A growing body of evidence supports mindfulness meditation to improve well-being in workplace settings; however, traditional in-person practice cannot be easily scaled. In this study, we tested the effects of an 8-week digital meditation program compared to waitlist control on self-reported mental health and work-related outcomes in a large sample of generally healthy university employees.

Methods and Materials: We enrolled 1,128 participants, all with reported perceived stress scale scores (Cohen et al., 1983) of greater than or equal to 15, and not already regular meditators. Participants were randomized to the intervention, (n=544) or waitlist control (n=584) condition for 8 weeks. The intervention was delivered entirely via a self-guided smartphone application (HeadspaceTM). Those in the meditation group were instructed to listen to 10 minute audio sessions per day. The following measures were collected at baseline and 8-weeks post-randomization to test treatment effects on mental health: Perceived Stress Scale (PSS), Patient Health Questionnaire-9 (PHQ9), Generalized Anxiety Disorder-7 (GAD7); and work-related outcomes: Siegrist Effort-Reward Imbalance Scale, Bergen Burnout Inventory, Utrecht Work Engagement Scale. We used linear mixed models to test intervention effects and tested whether treatment adherence served to moderate any intervention effects.

Results: Groups did not differ at baseline on any of the key measures of interest. Analyses revealed that participants randomized to the digital meditation intervention showed statistically significant improvements in measures of distress (perceived stress, symptoms of depression and anxiety), work related stress (burnout, effort-reward imbalance), and work engagement (all p 's < 0.001) compared to the waitlist control condition. Adherence to the meditation treatment moderated many of the results such that more frequent meditation was associated with greater benefits.

Discussion: Findings from this RCT suggest that a digital mindfulness meditation delivered to a healthy population of university employees has the potential to improve outcomes related to workplace stress and mental wellbeing. Strengths of this intervention were that it was self-guided and scaleable. If sustained over time, these effects may have implications to relieve burnout risk and healthcare costs.

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MANAGING CHRONIC MEDICAL PROBLEMS IN THE CONTEXT OF UNIVERSITY LIFE: A LONGITUDINAL QUALITATIVE STUDY

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Despite the common conception that college is a time of relative freedom and ease, up to a third of college students report long-standing illness that may limit their participation in academic and extracurricular life (Herts, Wallis, & Maslow, 2014; Stewart-Brown et al., 2000). Navigating university life with a chronic illness is undoubtedly challenging, but little research has characterized the stressful experiences of this unique group, such as the domains in which students experience stress and the variability of stressful experiences over time. Because students with chronic illness report considerable difficulties during college and well into adulthood (Maslow et al., 2011), researchers and clinicians must learn more about the everyday stressful experiences of students during their time on campus in order to promote immediate and long-term adjustment.

The present study assessed the stressful experiences of 144 undergraduate and graduate students with self-reported chronic medical conditions. The average participant was 20.9 years old (range = 18-41). Most were female (83.7%), White (74.8%), non-Hispanic (91.1%), and enrolled as an undergraduate student (81.5%). Students reported diagnoses related to digestive disorders (15.3%), asthma (13.2%), and headache/chronic pain (10.4%), with an additional 23.6% reporting multiple illness types. Participants completed three online surveys, spaced two weeks apart. At all timepoints, participants responded to an open-ended prompt, "In a few words, please describe the most stressful part of your illness(es) over the past 2 weeks." A grounded theory approach (Corbin & Strauss, 1990) was used to develop an initial codebook of stressor types. Coding differences were discussed among a group of three coders and the codebook was iteratively revised.

Qualitative responses illustrate the myriad stressful experiences of students with chronic illness, spanning multiple domains of university life. Fourteen distinct illness-related stressor types were identified, including: 1) symptom/pain flare-up; 2) sleep/fatigue problem; 3) diet/eating; 4) preventative health; 5) medication/equipment management; 6) barriers to receiving treatment from the medical system; 7) rumination/uncertainty about the future; 8) self-esteem; 9) concentration/attention; 10) general mental health concerns; 11) social embarrassment/isolation; 12) academics/productivity; 13) other restricted activities of daily living; and 14) none. However, most responses spanned multiple stressor types (e.g., social embarrassment about eating). Further, the types of experiences identified as most stressful varied substantially across occasions. These findings suggest that students with chronic illness may benefit from programming to enhance social connection, reduce stigma, and address academic concerns, in addition to traditional medical care.

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DOES ESTRADIOL POTENTIATE THE ANXIOLYTIC EFFECTS OF OXYTOCIN IN WOMEN AND MEN?

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Background: Anxiety and mood disorders are twice as common in women compared to men, suggesting that fluctuations in reproductive-related hormones, such as estrogen (E2) and oxytocin (OT), may play a role in these sex differences. However, until recent decades, the endocrinology of stress-responses has almost exclusively been assessed in males. Despite this, decades of animal research suggest that there are complex sex differences in the endocrine control of stress physiology. Here, we sought to explore how OT impacts stress in human men and women, and to test whether E2 potentiates the effect of OT in reducing stress.

Methods: Using a randomized double-blind design, 85 healthy adult men and women were randomly assigned to receive intranasal OT or placebo, and then psychological and physiological measures of stress were given in the context of an aggressive encounter with a stranger. Physiological measures included salivary E2, salivary cortisol, blood pressure (BP), heart rate and heart rate variability taken before, during, and after the stressful task. Psychological stress measures included the Positive and Negative Affect Schedule Scales (PANAS), Perceived Stress Scale (PSS), and Aggression Questionnaire (AQ).

Results: Regression models showed significant three-way interactions between E2, participant sex, and OT condition in all of the psychological markers of stress (PSS: $\beta = -4.321$, $p < .001$; PANAS, positive: $\beta = 4.027$, $p < .001$; PANAS, negative: $\beta = -5.126$, $p < .001$; AQ: $\beta = -2.576$, $p < .05$) and several physiological markers of stress (Diastolic BP: $\beta = 2.648$, $p < .05$; Systolic BP: $\beta = 2.221$, $p < .05$). Specifically, women who had higher E2 levels reported less negative affect, more positive affect, and lower perceived stress in the OT condition but not in the placebo condition. Conversely, males with higher levels of E2 reported higher psychological stress when given OT (but not placebo). Physiological markers of stress were less consistently modulated by sex, E2 and OT.

Conclusion: Estradiol potentiates anxiolytic effects of OT in women, but has the opposite effect in men. Our findings add to a growing body of research reporting sex differences in the effects of OT administration in humans, and highlight the need for further research on how interactions between endocrine factors moderate sex-differences in stress responses.

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CHANGING STRESS MINDSETS TO IMPROVE HEALTH AND PERFORMANCE WITH A NOVEL IMAGERY INTERVENTION: A RANDOMIZED CONTROLLED TRIAL

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Objective: Changing individuals' beliefs about the consequences of experiencing stress, stress mindset, has emerged as a technique for promoting adaptive outcomes under stress. This technique may be particularly valuable given the potential malleability of stress mindset through brief non-clinical interventions. However, there is limited data on the effect of these interventions on the management of "real-world" ecological stressors. The current pre-registered study aimed to evaluate the effectiveness of a novel imagery-based intervention for changing stress mindset, and for improving key stress-related outcomes.

Methods: University students visited a research lab twice over a two-week period ($N = 150$). The intervention was delivered following baseline measures in Session 1, and follow-up measures were taken in Session 2. Measures were perceived distress, psychological wellbeing, positive and negative affect, perceived physical health, proactive coping behavior, perceived somatic symptoms, and academic engagement. Objective academic performance data were also retrieved from university records. The intervention was pilot tested prior to the trial and was delivered using videos that provided information about stress, followed by guided imagery exercises. The control group received only a practice guided imagery exercise not related to stress. Data were analyzed using mixed design ANOVAs.

Results: The intervention had a large effect on stress mindset immediately post-intervention, and at the two-week follow-up, relative to the control group. There were no effects of the intervention on the stress-related outcomes for the pre-registered analyses of the whole sample. Further theory-guided analyses revealed robust effects of the intervention on positive and negative affect, perceived distress, proactive coping behavior, and academic performance at the follow-up in participants who had high levels of perceived distress at the baseline.

Conclusions: Findings reveal that the intervention is a promising approach for changing stress mindset, and that stress mindset can improve wellbeing and performance in those experiencing high levels of perceived distress. Future research should seek to replicate these findings and employ intensive longitudinal designs to examine momentary activation of stress mindset and its relationship with key stress-related outcomes following the intervention.

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DIFFERENCES IN CANNABIS WITHDRAWAL SYMPTOMS FOR MEN AND WOMEN OVER 21 DAYS

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Background: There is emerging consensus that women are at greater risk for more rapidly developing cannabis use disorders and subsequently seeking treatment. Identifying factors that may contribute to the cannabis telescoping effects is an important avenue for further investigation. Prior research suggests that women have a greater sensitivity to the effects of cannabis and may be at a greater risk for adverse outcomes related to cannabis-related consequences. Sex differences may directly impact cannabis withdrawal symptom expression, regardless of frequency and quantity of use. However, no prior research has examined whether withdrawal symptoms vary between men and women when considering naturalistic use patterns in daily life.

Methods: Two hundred and twenty-six recreational and regular cannabis users were recruited for the study and 216 were included in the present analyses due to attrition. Recreational users reported using cannabis on two or more occasions on average per month for the past 6 months and regular users reported a minimum of three times weekly cannabis use for the past 6 months. The mean age of the participants was 21 years old. The sample was 57% female and 43% male. Participants completed the Cannabis Use Disorders Identification Test (CUDIT), the cannabis use disorder (CUD) module of the SCID at baseline followed by three weeks of momentary reports on cannabis use and withdrawal symptoms as part of a smartphone based ecological momentary assessment (EMA).

Results: Withdrawal symptoms, number of days cannabis was consumed, and number of hits of cannabis consumed were calculated from the EMA reports. A one-way ANOVA was performed to examine sex differences in cannabis use, hazardous use, and withdrawal symptoms. Men and women did not differ in number of days used or hits consumed over the 21 day assessment period, nor did they differ in the number of CUD criteria met. However, men reported higher levels of hazardous cannabis use than women at baseline. In addition, women reported higher levels of withdrawal symptoms over the course of the EMA study. **DISCUSSION:** These results support the hypothesis that women are particularly susceptible to cannabis withdrawal symptoms, even within naturalistic longitudinal reports. This tendency to experience more withdrawal symptoms may account for the telescoping effects previously observed for CUD in women. In addition, it is important to note that women reported significantly lower CUDIT scores than men. This suggests that the experience of withdrawal symptoms may be independent of hazardous use. Future research should examine whether additional factors may better inform models of risky cannabis use in women.

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DECREASED DAILY QUALITY OF SLEEP WAS ASSOCIATED WITH INCREASED DAILY CANNABIS CRAVING IN RURAL TEENS THAT REGULARLY USE CANNABIS

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Introduction: Cannabis is the most commonly used illicit drug in the United States, and its rate of use, unlike other substances, has not decreased amongst teenagers. Among adolescents that regularly use cannabis, craving is an important predictor of use patterns and failures to abstain from use. Adolescence is also a developmental period where sleep duration and quality are disrupted. Studies have supported associations between cannabis use and sleep but not examining daily variation in sleep quality and cannabis craving among adolescents that regularly use. It was hypothesized that poorer daily sleep quality would be associated with increased daily cannabis craving among rural adolescents that regularly use cannabis.

Methods: Adolescents aged 15-18 (n=1, 46% female) from rural communities who endorsed regular cannabis use in the last thirty days participated in an ecological momentary and passive sensing assessment for fourteen days, including reports of cannabis craving and cannabis use five times daily (averaged for each day) and reports on the prior night's sleep quality each morning. Correlation and multi-level modeling were used to test between and within person daily associations.

Results: Across the fourteen-day study period, worse average sleep quality was associated with increased cannabis craving ($r = -.70$, $p = .01$) but not percent of days with cannabis use ($r = .26$, $p = .39$). In a multilevel model, intraindividual increases in daily sleep quality ($b = .26$, $SE = .13$, $p = .05$) and between person poorer average sleep quality ($b = -2.94$, $SE = .85$, $p = .01$), but not prior day cannabis use ($b = -.01$, $SE = .38$, $p = .98$) were associated with increased cannabis craving.

Conclusion: Poorer average sleep quality predicts greater daily cannabis craving in rural adolescents who regularly use cannabis, while small daily increases in sleep quality above a person's average may also be associated with increased cannabis craving. Further research is needed to better understand the mechanisms linking daily sleep quality with cannabis craving to inform possible intervention approaches.

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SUBSTANCE USE AND EXPERIENCED VIOLENCE AMONG FEMALE SEX WORKERS ON BOTH SIDES OF THE HAITI DOMINICAN REPUBLIC BORDER

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Background: Studies that examine behaviors of populations that live and work on a geographic border are scarce, studies that evaluate the behaviors of those who make a living at the border, such as sex workers and day laborers are even fewer. Border studies are scientifically valuable, as they can highlight the intersections of psychological factors, with sociological ones, along with the influences of public health and medical care. Considering the value of these studies, we explored experiences of violence, abuse, and substance use (a coping mechanism) in Haitian sex workers living and working on the border of the Dominican Republic (DR) and Haiti, two nations that share one island.

Methods: Data for this study was from the 2015 Baseline Study on Sex Workers (N=232). We used bivariate analyses to compare outcomes between sex workers of both sides of the border. Multivariable analyses applied location as a control; we reported associations across three measures of physical violence.

Results: We found significant differences between sex workers in our bivariate and multivariate analyses. Sex workers in the Haiti were less likely to experience violence from regular partners relative to sex workers in the DR (OR=0.37, $p < 0.05$); conversely sex workers in Haiti were more likely to experience violence from co-workers (OR=6.38, $p < 0.001$). When including controls, higher education was protective against certain violence ($p < 0.001$). Alcohol use and physical abuse in childhood were statistically predictive of experiencing violence regardless of work location (OR=6.40, $p < 0.001$; and 2.82, $p < 0.01$; respectively).

Conclusions: We find that sex workers on both sides of the DR-Haiti border are victimized, abused, and may cope through substance use. The DR is upper-middle income; Haiti is considered a low-income nation, and these classifications are often associated with population health. However, we find varying rates of violence and substance use, reflecting the possible influence of local culture. Further qualitative studies deconstructing these negative experiences could inform researchers and public health scholars interested in the intersection of psychological and sociological forces on behaviors of high-risk sex workers.

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TESTING PATHWAYS BETWEEN NEIGHBORHOOD ENVIRONMENT AND ALCOHOL USE DISORDER IN MEXICAN AMERICAN YOUNG ADULTS

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Background: Hispanics born in the United States (US) have higher rates of alcohol use disorder (AUD) compared to those born in their ancestral country. Neighborhoods play a critical role in heavy drinking, with documented protective enclave effects (benefits of living in an area with many other Hispanic residents). For Mexican Americans (MAs), living in ethnic enclaves or in close proximity to the US-Mexico border may help them maintain their cultural identity and reduce acculturation stress. However, border proximity also can lead to high trauma rates given high violence prevalence in these areas. The current study tests associations of neighborhood factors (proportion MA, border proximity) with acculturative stress, ethnic identity and trauma, and, in turn, relationships with AUD in a sample of MA young adults.

Methods: Respondents were sampled from select areas of Southern California (N=622). They completed the Semi-Structured Assessment for the Genetics of Alcoholism and scales on acculturative stress and ethnic identity. Data were linked with neighborhood data from the American Community Survey. The sample was 23.7 years old on average and nearly 60% were female. About half (47.6%) met diagnostic criteria for lifetime AUD, and 40% reported at least one experience of significant lifetime trauma, with rates of both AUD and trauma higher among men. The average distance to a designated port of entry was 13.6 miles, and the average neighborhood proportion Mexican was 41.8%. Because of gender differences in AUD development, we performed multiple-group path analyses to test for differences in mediated effects.

Results: For women, neighborhood proportion Mexican was negatively associated with AUD ($\beta = -0.009$, $p < .05$) while acculturative stress ($\beta = 0.02$, $p < .01$) and trauma ($\beta = 0.17$, $p < .05$) were positively associated with AUD; border proximity and ethnic identity were not associated with AUD (both $p > .10$). For men, only acculturative stress was associated with higher AUD rates ($\beta = 0.02$, $p < .01$). Neither proportion Mexican nor border proximity were related to any of the hypothesized mediators, and all indirect pathways were not statistically significant (all $p > .10$).

Conclusions: Future research should consider other pathways to AUD in MA young adults. Interventions to reduce acculturative stress are indicated. Gender differences suggest trauma-informed AUD treatment may be beneficial for women. Intervention strategies also may need to reach women who live outside of enclaves to reduce the burden of AUD.

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ISOLATION, LONELINESS AND OFF-LABEL DRUG USE AMONG RURAL RESIDENTS: SOCIAL MEDIA- AND MTURK-BASED SURVEYS

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Background: The current epidemic of off-label drug use and addiction is worsening in isolated rural communities, in particular, where residents experience loneliness and lack of social support. We examined an array of demographic and behavioral characteristics of rural residents to identify whether the magnitude of psychological deficit states (e.g., lack of social support, loneliness) are greater among rural residents with chronic pain and concurrent off-label drug use, compared to those without these conditions.

Methods: We used crowdsourcing and social media platforms to recruit residents in pre-designated rural states, and assessed demographic characteristics, chronic pain status, and their off-label drug use histories. For psychological deficit states, we measured perceived social support, loneliness, rurality attitudes, and attachment toward their residential community by adopting and modifying previously validated questionnaires. These four psychological constructs were analyzed across subgroups using Analysis of Variance and the inference by eye (IE) technique. We also performed structural equation modeling with maximum likelihood estimations to examine to how these psychological deficit states are related to drug abuse and pain status in rural communities.

Results: The participants had an average age of 38.4 years and were 66.7% female and 95% white. Two dichotomized variables characterizing drug abuse and chronic pain status (chronic pain: [yes | no] × off-label substance use [yes | no]) were cross-tabulated to identify four subgroups (chronic pain patients with off-label drug use history [n = 102], chronic pain patients without off-label drug use history [n = 330], non-pain patients with off-label drug use history [n = 104], and non-pain patients without off-label drug use history [n = 497]). Among the eligible participants (n = 1,033), people with chronic pain were more likely to engage in off-label drugs compared to those without chronic pain (Pearson $\chi^2 = 6.26$, $p = .01$). Off-label drug use tended to predict more negative attitudes toward living in rural areas, less social support, and greater emotional isolation than those without pain and off-label drug use (CFI = .97, RMSEA = .05, SRMR = .03).

Conclusion: As psychological deficit states were contributing factors that were distinctive to those with drug abuse and chronic pain in rural communities, it is critical to consider strategies ameliorating emotional isolation and enhancing social support, where these patients can further internalize their improved psychological states to engage in health promoting behaviors. We also argue that advances in social technologies and their ubiquity may offer opportunities to provide easily accessible, cost-effective, personalized social support and resources to rural patients who are hard to reach due to geographical barriers.

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HOSPITALS CAN'T DO IT ALONE: NAVIGATING ADDICTION TREATMENT

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Background: Hospitals support communities in times of crisis, however the current prevalence of substance use issues have put a strain on traditional clinical settings. Patients who are identified as engaging in high-risk substance use face a systematic absence of comprehensive discharge planning and connection to specialized care navigation. In the U.S. in 2018, only 10.2% of people with a substance use disorder received treatment.

Objective: Develop a specialized external navigation framework for substance use.

Methods: Project Connect (PC) is a collaboration between a large healthcare delivery system and a community-based organization. PC was built on top of our Screening, Brief Intervention, and Referral to Treatment (SBIRT) Program in two large emergency departments (EDs). PC staff were on-boarded as health system volunteers and trained on SBIRT, health system policies, and procedures. SBIRT Health Coaches identified patients who would benefit from external care navigation for substance use and called PC staff to engage with the patient, enrolling 298 patients from April 2018 to August 2019. PC staff completed a baseline intake, and structured engagement at 7/30/60/90/120 days. Support provided for patients and families included referrals to the most appropriate services regardless of affiliation (neutrality), connection to transportation, assistance with insurance, and continued conversations to maintain motivation and hope. We utilized REDCap for shared data collection between the two organizations and IBM SPSS Statistics v. 22 for descriptive statistics and analysis.

Results: 200 (68%) patients were successfully reached by PC staff for a baseline intake and external care navigation. Of those able to be reached, 53% were engaged in treatment for their substance use at baseline, 65% at 30 days, 60% at 60 days, 53% at 90 days, and 71% at 120 days. At 120 days, an additional 15% of patients not in treatment reported abstinence. PC staff assisted patients with navigation between levels of care, including detox, inpatient, outpatient, and sober housing. Out of 298 patients enrolled, 45 (15%) attended at least two different programs, and 154 (52%) attended at least one program. Other services provided include family support, social service applications, primary care referrals, and coordination with the criminal justice system.

Conclusions: Project Connect has served to illustrate the importance of measured approaches in formulating cross-organizational collaborations and has proven to be a successful model for supporting patients with substance use issues beyond the hospital setting. 52% of patients engaged in any treatment well exceeds the national average of 10%. Shared communication pathways have allowed for open conversation and continual process improvement. This model is being disseminated to additional EDs and future studies will evaluate patient experience measures.

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SBIRT IMPLEMENTATION: PRE-CHARTING OF SCREENING RESULTS AND RESOURCE INFORMATION TO INCREASE PROVIDER INTERVENTIONS

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According to recent epidemiological research, 19.7 million people aged 12 or older met diagnostic criteria for a substance use disorder, highlighting the need to identify individuals with substance use disorders in order to provide them with interventions.¹ Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence based public health approach for the early identification and treatment of individuals with risky substance use.² This study examined the impact of SBIRT implementation at two family medicine training clinics. SBIRT implementation included provider and staff SBIRT education, as well as including the NIDA-modified ASSIST³ in the pre-visit workflow. Despite incorporating screening results into the electronic medical records (EMR), providers documented interventions for positive screens at only 22.3% of visits. Therefore, the behavioral health team began reviewing screening results and providing an additional notification to medical providers prior to the visit, both by flagging patient charts with positive screens and adding a pre-visit chart note. The pre-visit chart note included screening results, intervention options within the clinic (i.e., consulting behavioral health provider) and community resources. Results for 497 patients (female = 67%) who had screened positive for risky substance use indicated that the percentage of documented provider interventions increased from 22.3% to 43.1%. The percentage of referrals was unchanged (8.3% to 5.6%). Results suggest that screening alone for risky substance may not be adequate to change medical provider behavior; however, adding EMR-based notifications and resource reminders may be a cost-effective means of increasing interventions.

References

1. Center for Behavioral Health Statistics and Quality (2017). *2016 National Survey on Drug Use and Health: Methodological summary and definitions*. Rockville, MD: Substance Abuse and Mental Health Services Administration
2. Agerwala SM, McCance-Katz EF. Integrating Screening, Brief Intervention, and Referral to Treatment (SBIRT) into Clinical Practice Settings: A Brief Review. *J Psychoactive Drugs*. 2012;44(4):307-317. doi:10.1080/02791072.2012.720169
3. (2012, March 1). Resource Guide: Screening for Drug Use in General Medical Settings. Retrieved from <https://www.drugabuse.gov/publications/resource-guide-screening-drug-use-in-general-medical-settings> on 2019, April 5.

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VAPING AMONG ADOLESCENTS IN TREATMENT FOR SUBSTANCE USE DISORDERS

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Significance: Little is known about correlates of vaping behaviors among at-risk adolescents. Of particular interest are adolescents who are in treatment for substance use problems, who may be particularly vulnerable to vaping nicotine and cannabis.

Methods: Data were gathered from all adolescents aged 12-17 with a specialty addiction intake appointment in 3 medical offices of a large, integrated health-care system (2017-2019; N=283; 65% male, mean age=15.5). We used natural language processing to extract data on patients' vaping from intake notes. We used multivariable logistic models to test for associations of vaping with socio-demographics, cigarette smoking, and substance use disorders.

Results: Of the 223 patients screened for vaping (79%), 67% reported ever vaping. A majority reported currently vaping nicotine (52%) or cannabis (53%); 43% vaped nicotine and cannabis; and 38% did not currently vape. Few (4%) were documented current cigarette smokers, yet 20% reported smoking blunts. Common reasons for vaping nicotine included availability (47%), flavors (28%), ability to use in places one cannot use other forms of tobacco (19%), friends' use (15%), less dangerous than smoking (15%), and ability to be discreet (7%). Black patients were less likely than other racial/ethnic groups to vape nicotine (OR=.02 to .04, all ps < .01) or cannabis (OR=.09 to .28, all ps < .05), but more likely to smoke blunts (OR=5.8 to 12.1, all p < .02). Those with an alcohol use disorder had higher odds of current vaping of nicotine (OR=3.05, p=.03), and those with "other" substance use disorder (excludes alcohol and cannabis use disorders) had higher odds of current cannabis vaping (OR=3.05, p=.03). Cigarette smoking, age, and sex were not associated with vaping.

Discussion: Among adolescents in addiction treatment, approximately half reported vaping nicotine and/or cannabis. Black youth had low rates of vaping, but high rates of blunt use. Availability, flavors, social norms, and low risk perceptions were key drivers of use. Research is needed to understand vaping patterns in at-risk adolescents and whether vaping interferes with addiction treatment.

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THE INTERSECTION OF GENDER AND SUBSTANCE USE-RELATED STIGMA: A SYSTEMATIC REVIEW OF THE LITERATURE

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Background: Women who use drugs are at a greater risk of drug-related harms, like HIV transmission. Furthermore, substance use-related stigma negatively impacts psychological well-being and serves as a significant barrier to health care service access among people who use drugs (PWUD). Less is known, however, regarding how intersectional identities, like gender, shape experiences of substance use-related stigma and harms. We, therefore, sought to answer the following questions: (1) Do non-substance using men or women stigmatize PWUD more? and (2) Do men or women PWUD experience more substance use stigma?

Methods: Data were drawn from a large systematic review of the peer-reviewed scientific literature on substance use-related stigma conducted in 2017 and guided by the Stigma and Substance Use Process Model. Articles were included in the present analysis if they assessed: (1) both gender-based stigma and substance use-related stigma or (2) the moderating effect of gender on substance use-related stigma.

Results: Of the 35 quantitative articles that met inclusion criteria, most studies were from North America (57.1%), with fewer from Australia (14.3%), Europe (11.4%), Asia (8.6%), and Africa (2.9%). Twenty-four (68.6%) articles evaluated stigma from the perspective of non-substance using individuals and 11 (31.4%) assessed stigma from the perspective of PWUD. Of those evaluating stigma from non-substance using individuals, 41.6% found women endorsed more stigma toward PWUD, 16.7% reported that men endorsed more stigma, and 37.5% found no gender differences in endorsement. Of the articles evaluating stigma experienced by PWUD, 81.8% found no relationship between gender and substance use-related stigma and 18.2% found female PWUD experience greater levels of stigma. Additionally, only 5.7% moved past the binary measurement of gender, and none tested the impact of intersecting gender and substance use stigma on substance use-related outcomes.

Conclusion: The literature is inconclusive regarding the influence of gender on substance use-related stigma. Consequently, this review identifies potential areas for methodological improvement and future research. Specifically, the use of validated stigma measures, the disaggregation of stigma measures by gender, and assessments of the effect of intersectional stigma on substance use-related outcomes are needed to understand the role of stigma in heightening the disproportionate harms experienced by women who use drugs.

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EXAMINATION OF SEASONALITY IN HEALTH INDICATORS AND RISK BEHAVIORS AMONG ALASKA NATIVE MEN AND WOMEN IN NORTHWEST ALASKA

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Introduction: Seasonality is a pattern of changes in behaviors and/or mood related to the season or time of year, such as seasonal affective disorder in winter. While the specific mechanisms of seasonality are not fully understood, variations in daylight and temperature are believed to play a role. The current study examined seasonal differences in health status and cardiovascular disease (CVD) risk behaviors among Alaska Native men and women smokers in the Norton Sound Region of Alaska. The existence of seasonal differences in behavioral patterns would suggest the need to control for season in longitudinal analyses of behavioral outcome data in the main trial.

Methods: Data were collected at baseline in the Healing and Empowering Alaskan Lives towards Healthy Hearts (HEALTHH) Project (N=299). We examined participants' self-reported health status, depressive symptoms (10-item CESD), alcohol and cannabis use, cigarettes per day and time to first cigarette (TTFC) upon waking, physical activity, and sleep to assess seasonality and associations with hours of daylight and temperature. We compared data from participants enrolled in winter (October 15 – April 30, n=149, 50%) versus the rest of the year (n=150, 50%). Data on hours of daylight and average daily temperatures for the region were collected from timeanddate.com and wunderground.com.

Results: As expected, the winter season averaged significantly less hours of daylight ($M = 7$ hours 48 min, $SD = 3$ hours 55 min) than the rest of the year ($M = 17$ hours 43 min, $SD = 3$ hours 34 min, $p < .001$) and colder average daily temperatures ($M = 19.8^\circ\text{F}$, $SD = 14.0^\circ\text{F}$ vs. $M = 47.8^\circ\text{F}$, $SD = 7.3^\circ\text{F}$, $p < .001$). Past month alcohol and cannabis use, smoking quantity, physical activity, sleep, and global health rating did not differ for winter versus other seasons. Significantly shorter latency in time to first cigarette (TTFC) after waking was observed for winter (W) than other (O) seasons (< 5 mins: 33% W vs. 21% O; 6-30 mins: 38% W vs. 39% O; 30+ mins: 14% W vs. 20% O, $p = .050$) and was significantly correlated with colder daily temperature (Spearman $r = .14$, $p = .014$) and fewer hours of daylight (Spearman $r = .15$, $p = .009$). CESD depression scores were significantly higher in winter ($M = 6.7$, $SD = 5.8$) than other seasons ($M = 5.1$, $SD = 4.6$, $p = .009$) and significantly correlated with colder temperature ($r = -.13$, $p = .024$) and fewer hours of daylight ($r = -.13$, $p = .030$). TTFC and CESD scores were not significantly correlated with each other, $r = -.11$, $p = .073$.

Conclusions: Most CVD risk behaviors were found invariant by season among Alaska Native men and women in the sample. The notable exceptions were depressive symptoms and TTFC, an indicator of nicotine addiction severity; both related significantly to temperature and daylight hours but not to each other. While seasonal mood effects are well documented, the observed seasonal difference in nicotine addiction severity is novel and warrants further study.

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HIGH NICOTINE DEPENDENCE AT BASELINE PREDICTS CHANGES IN DEPRESSION DURING A SMOKING CESSATION ATTEMPT

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Background: The relationship between depression and smoking is complex; while some literature suggests that depression precedes smoking (i.e., those who are depressed use smoking to cope), other literature indicates that smoking precedes depression. Studies have indicated that depression symptoms increase during early phases of a quit attempt (e.g., on the quit-date), but return to baseline as the cessation attempt progresses. This study aimed to examine whether baseline nicotine dependence predicts changes in depression symptoms among adult smokers during a smoking cessation attempt.

Method: This study was part of a larger 13-week pilot randomized controlled trial that compared three smoking cessation interventions (in person counseling, NCI QuitGuide app, and Smart-T2 app). All participants received combination nicotine replacement therapy (i.e., nicotine patches and gum) and completed ecological momentary assessments on smartphones. Participants reported demographic characteristics and nicotine dependence (HSI; Kozlowski et al., 1994) at baseline. HSI was dichotomized as high [≥ 5] vs. low/moderate [< 5]. Participants reported depression symptoms (CES-D; Radloff, 1977) at baseline, on the quit-day, and at 4-weeks post-quit. A repeated measures analysis with fixed effects examined whether depression symptoms across the first 5-weeks of the study differed by HSI level.

Results: Participants (N=81) were male (51.2%), White (67.9%), and 49.4 years old (SD=12.2). Baseline depression symptoms were significantly lower among smokers with low/moderate HSI compared to smokers with high HSI ($p=0.0002$). Compared to smokers with low/moderate HSI, whose depression symptoms were consistent across time ($M=-6.5$), smokers with high HSI were significantly more likely to experience changes in depression symptoms ($p=.046$) that generally decreased over time (baseline $M=12.8$; quit-day $M=8.5$; 4-weeks post-quit $M=10.0$). This relationship remained significant after accounting for treatment group, sex, race/ethnicity, education, and 7-day biochemically confirmed abstinence status at 4-weeks post-quit ($p=.04$).

Conclusions: Compared to those with low/moderate nicotine dependence, highly dependent smokers had higher levels of depression at baseline and experienced a reduction in depression symptoms during the smoking cessation attempt. Future smoking cessation interventions may benefit from tailoring treatment based on individual history of depression and level of nicotine dependence.

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E-CIGARETTE FLAVOR BAN POLICY SUPPORT AND PREDICTED BEHAVIORAL INTENTIONS AMONG U.S. E-CIGARETTE USERS.

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Background: E-cigarette use has grown substantially, with 27.5% of high school students and 7.6% of young adults reporting current e-cigarette use in 2019. Research indicates that flavors play a vital role in tobacco initiation, and 72%-97% of current youth and young adult e-cigarette users report using flavors. In September 2019, the U.S. government suggested enacting a policy to ban all flavored e-cigarettes, including menthol, in an effort to curb youth and young adult e-cigarette use. This study examines support for this policy, and the predicted behavioral intentions if flavored e-cigarettes were banned.

Methods: We surveyed a national sample of U.S. youth and adults ages 15-34 (n=2049). Behavioral intention analyses were limited to ever e-cigarette users (n=1083). Descriptive analyses examined policy support and likelihood of behavioral intentions. Chi-square analyses examined differences in demographic characteristics (age, gender, race/ethnicity, region, perceived income, and education) and tobacco use status by 1) policy support and 2) behavioral intentions.

Results: Approximately 52% of respondents supported/strongly supported a ban on flavored e-cigarettes. Policy support significantly differed by smoking status (current 36%, non-current 59%, $p<0.05$), and e-cigarette use status (current 61%, non-current 35%, $p<0.05$). Support was also significantly associated with education, income, age, and gender ($p<0.05$). Ever e-cigarette users reported likely/very likely to the following behavioral intentions if flavored e-cigarettes were banned: quit tobacco altogether (58%), stockpile (42%), use tobacco flavored e-cigarettes (37%), smoke menthol cigarettes (36%), and smoke non-menthol cigarettes (36%). Intention to: 1) quit tobacco was significantly associated with current cigarette use and race/ethnicity, 2) stockpile was significantly associated with current cigarette use, current e-cigarette use, education, income, age, and gender, and 3) use tobacco flavored e-cigarettes was significantly associated with current cigarette use, current e-cigarette use, education, income, age, and gender ($p<0.05$).

Discussion: Over half of US adults surveyed supported a flavored e-cigarette ban, but support is significantly lower among current e-cigarette and cigarette users. Although most ever e-cigarette users indicated an intention to quit if flavored e-cigarettes were banned, over a third indicated intentions to continue using tobacco products. This may moderate the public health benefit of a flavored e-cigarette ban, especially if e-cigarette users turn to combustible products. Attention needs to be paid to treat youth and young adults who are addicted to nicotine to minimize tobacco product substitution. This research further points to a need to regulate all flavored tobacco to reduce nicotine exposure and tobacco use behaviors among youth and young adults.

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EXAMINATION OF DEPRESSIVE SYMPTOMS AND STRESS AS PREDICTORS OF QUIT ATTEMPTS IN A CESSATION INDUCTION TRIAL

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Introduction: Quitting smoking involves multiple behavioral steps, and factors predictive of initiating a quit attempt may not be the same as those predictive of maintaining long-term abstinence. Perceived stress and depressive symptoms, which have been shown to reduce the likelihood of cessation, have yet to be examined as predictors of a quit attempt.

Objective: The objective of this study was to examine the association between depressive symptoms or stress and the likelihood of making a quit attempt when in a smoking cessation induction intervention.

Methods: A secondary data analysis was conducted using data from a randomized smoking cessation induction trial. Smokers with low motivation to quit (N=255) received Motivational Interviewing, health education or brief advice. Depressive symptoms were assessed with the 20-item Center for Epidemiologic Studies Depression Scale (CES-D) and perceived stress was assessed with the 14-item Perceived Stress Scale (PSS). Analyses focused on whether depressive symptoms and perceived stress (assessed at baseline, week 12, and week 26) was associated with a quit attempt (assessed at baseline, week 12, and week 26), regardless of treatment received.

Results: Results revealed few significant associations between perceived stress or depressive symptoms and quit attempts across all time points. Logistic regression models that adjusted for treatment group and gender revealed weak positive associations between baseline stress, baseline depressive symptoms and week 12 stress and making a quit attempt by week 12 (OR= 1.52, 95% CI [1.04, 2.21]; OR=1.03, 95% CI [1.01, 1.06]; OR=1.49, 95% CI [1.04, 2.13], respectively). There were no significant associations between the predictors and quit attempts at or between any other time points. A model that included baseline depressive symptoms and baseline stress as predictors in the same model revealed that neither was an independent predictor of quit attempts.

Conclusion: Higher levels of depressive symptoms and perceived stress may have a weak short-term association with quit attempts. In contrast to prior findings related to cessation, higher distress was associated with a greater likelihood of making a quit attempt. This suggests that these smokers, while more easily encouraged to try to quit, are less likely to succeed in their attempt. Findings highlight the potential importance of distinguishing between the different phases of the quitting process in research and treatment.

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INFLUENCE OF RACIAL/ETHNIC DISCRIMINATION EXPERIENCES ON CIGARETTE CRAVING AMONG AFRICAN AMERICAN AND LATINO CIGARETTE USERS

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Despite African American and Latino individuals generally smoking equal to or fewer cigarettes than White individuals, they have a higher smoking-attributable mortality rate, experience more smoking-related diseases later in life, and have lower cessation rates than White smokers. Research supports that experiences that elicit negative affect are associated with increases in cigarette craving. The current study examined the influence of racial/ethnic discrimination experiences on cigarette craving among African American and Latino smokers. Thirty-four African American and Latino smokers completed two writing tasks. One task elicited distressing experiences of racial/ethnic discrimination, and the other elicited distressing experiences of job- or academic-related failure. Order of the writing task completion was counterbalanced. Participants completed pre- and post-task measurements of the Questionnaire of Smoking Urges-Brief (QSU-B) and the negative affect subscale of the Positive and Negative Affect Schedule (PANAS-NA), and were asked to retrospectively rate the level of distress produced by each experience about which they wrote. A series of ANOVAs were computed to assess differences in the QSU-B and PANAS-NA in each condition. Cigarette craving measured by the QSU-B significantly increased from baseline to post racial/ethnic discrimination task [$F(1, 33) = 4.23, p < .05$] and post academic/job failure task [$F(1, 33) = 5.43, p < .05$]. Negative Affect as measured by the PANAS-NA did not increase from baseline to post-task for either experimental group (p 's > 0.05). The post- academic/job-related failure writing task QSU-B score was significantly related to the distress rating of the academic/job-related failure experience when controlling for PANAS-NA scores [QSU-B: $\beta = 0.04, p < 0.05$], but not the racial/ethnic discrimination task. These results suggest that recollection of racial/ethnic discrimination experiences have a similar impact on cigarette craving compared to recollection of academic/job-related failure experiences. The study highlights the importance of examining cultural experiences that are linked to cigarette use among ethnic minorities and the continued need for experimental research among ethnic minority smokers.

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FACTORS ASSOCIATED WITH A SMOKERS' WILLINGNESS TO ENGAGE A PARTNER IN SMOKING CESSATION

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Background: Although observational studies suggest a positive association between positive support and successful quitting, the effectiveness of partner support on long-term smoking abstinence has not been demonstrated in behavioral interventions. Individuals who seek out social support for health purposes may benefit more from partner support interventions.

Methods: We explored factors associated with a smoker's willingness to engage a partner in smoking cessation efforts to inform the development of suitable partner support cessation interventions. We conducted a cross-sectional study using data collected from a current online randomized controlled smoking cessation trial. We assessed willingness to engage a partner using the question, "Would you be interested in a program that also includes your partner or spouse in smoking cessation?" and binary responses. Unadjusted and adjusted odds ratios (aOR) with 95% confidence intervals (CI) were derived from logistic models. Adjusted odds ratios account for demographic and smoking behaviors.

Results: Of the 983 participants, 27.7% (n=272) were willing to engage a partner. Compared to men, women tended to have lower odds of willingness to engage a partner (aOR; 0.82; 95% CI: 0.58 – 1.16), although the 95% confidence interval included one. Smokers who reported electronic cigarette use were more likely to report willingness to engage a partner in cessation efforts, (aOR: 1.51; 95% CI: 1.02-2.25) compared with smokers who did not report electronic cigarette use. The odds of willingness to engage a partner were more than two-fold for participants with smokers in the immediate family (aOR, 2.18; 95% CI: 1.51 – 3.15 for having 1-3 smokers; aOR, 3.12; 95% CI: 1.95 – 4.98 for ≥ 4 smokers) compared to having no smokers in the immediate family. Smokers who visited a smoking cessation website were more likely to be willing to engage a partner in cessation (aOR, 1.62; 95% CI: 1.18 – 2.21) than those who had not visited a website.

Conclusions: There are characteristic differences between those who were willing to engage their partner in a smoking cessation intervention and those who were not. Future research is needed to assess whether enhancing partner support among smokers in close relationships with other smokers can be achieved.

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IMPLICATIONS FOR DEVELOPING AN INTERACTIVE MOBILE DOCTOR (iMD) INTERVENTION TO ENGAGE ASIAN FEMALE SMOKERS TO QUIT SMOKING

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Background: There are few effective cessation strategies targeting Asian female smokers. A multi-lingual interactive mobile doctor (iMD) developed by our practice-based and academic research partnership has shown promises in increasing patient-provider discussions on tobacco use among Asian male patients in primary care. This study was designed to use qualitative formative research to guide iMD expansions to engage Asian female smokers.

Methods: We conducted 8 in-depth interviews with Chinese-, Korean-, and Vietnamese-speaking female smokers recruited from a federally-qualified health center in Oakland, California. Participants were interviewed about their smoking-related experiences and attitudes and asked for feedback on iMD that delivers interactive videos. Interviews were transcribed in English and thematic analysis was conducted.

Results: Participants were 3 Chinese, 3 Korean, and 2 Vietnamese female smokers with a mean age of 44.5 years (range: 32 – 63). Only one indicated an intention to quit. Key themes centered on how intervention could engage Asian female smokers were categorized into "6 Rs," which was expanded from the "5 Rs" model for smoking cessation. **Relevance:** Participants emphasized the importance of discussing smoking in the context of personal health conditions by age or family's health. **Risk:** Videos should explain how smoking could impact their physical appearance, exacerbate diseases, or harm their family. **Rewards:** In addition to the health benefits of quitting, quitting could reduce stress from the stigma against Asian women's smoking and needs to hide their smoking and could improve confidence and self-image. **Roadblock:** Coping with stress and nicotine withdrawal symptoms were most frequently mentioned. A few felt reluctant to discuss with their provider details about their smoking due to stigma and fear of disclosing smoking. **Resource:** Participants wanted the video to discuss specific healthy lifestyle changes to help them resist smoking. Information on nicotine replacement therapy was perceived as helpful. **Repetition:** Participants indicated that seeing video messages and images on health risks of smoking were helpful reminders to consider quitting. Most participants emphasized the importance of viewing the iMD in a private setting, and some indicated they would be more willing to provide details of their smoking via an app or online interface.

Conclusion: Asian female smokers experience strong stigma of smoking that present unique barriers to accessing needed clinical support for quitting. Mobile intervention was acceptable for delivering tailored cessation education while providing the privacy needed to engage them. Future interventions should incorporate elements of 5 Rs and provide information on evidence-based cessation treatments and alternative coping strategies for stress and withdrawal symptoms.

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KOREAN IMMIGRANT WOMEN'S CAREGIVING IN THE CONTEXT OF TOBACCO USE: IMPLICATIONS FOR INTERVENTIONS

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Implications: In order to facilitate productive interactions towards smoking cessation, Korean women should be encouraged to minimize generalized caregiving forms and focus on goal-oriented forms. Korean male smokers should be encouraged to partake in caregiving forms and perceive the relational and health impacts of smoking on family members.

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RACIAL/ETHNIC DIFFERENCES IN SWITCHING BEHAVIOR AMONG ADULT CURRENT SMOKERS WHO USE THE NICOTINE SALT POD SYSTEM (NSPS)

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LONGITUDINAL ASSOCIATIONS BETWEEN ADOLESCENT SMOKING AND INTERGENERATION UPWARD EDUCATIONAL MOBILITY BY PARENTAL EDUCATION

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Intergenerational upward educational mobility represents increasing educational and economic opportunities in subsequent generations, which are often related with better health. A few European studies found cigarette smoking to be inversely associated with intergenerational upward mobility. The current study assesses the association of smoking during high school years on intergenerational upward educational mobility in a U.S. longitudinal study of youth.

Data were collected annually from a nationally representative cohort of 10th graders who participated in the NEXT Generation Health Study (2010–2017; N=1,503). Participants reported if they smoked in the past 30 days annually during 2010–2013. Those who reported any smoking in 2010–2013 were classified as adolescent smokers; those who reported no smoking during the same time period were classified as adolescent nonsmokers. Parent educational attainment was assessed in 2010, and participant educational attainment was measured in 2017. Upward education mobility was defined as participants obtaining a bachelor's degree by 2017. Weighted multivariable logistic regression was used to assess the association between smoking during high school years and upward educational mobility, stratified by parent educational attainment, adjusted for gender, ethnicity/race, region, urbanicity, family affluence and alcohol use in 2010.

We found that upward educational mobility varied by parent educational attainment (parents had a high school education or less=14%, parents had some college education=23%, parents had college education=49%). We also found that adolescent smoking was negatively associated with upward educational mobility, but only among participants whose parents did not complete college. Specifically, among participants whose parents had high school education or less, 4% of adolescent smokers vs. 19% of adolescent nonsmokers completed college (AOR: 0.11; 95% CI: 0.03–0.38). Among participants whose parents had some college education, 7% of adolescent smokers vs. 30% of adolescent nonsmokers completed college (AOR: 0.13; 95% CI: 0.06–0.30).

Our results indicate that adolescent smoking may inhibit upward educational mobility for people whose parents have had less than a complete college education, implying that smoking behaviors may perpetuate socioeconomic and health disparities. Effective strategies to reduce smoking among adolescents from low socioeconomic families may promote socioeconomic and health equity.

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THE ROLE OF DISCRIMINATION IN SUBSTANCE USE BEHAVIORS IN HISPANIC YOUNG ADULTS: A LONGITUDINAL STUDY THROUGH EMERGING ADULTHOOD

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Purpose: Associations between discrimination and substance use have been identified cross-sectionally in multiple populations including Hispanics. However, there is limited research exploring this phenomenon longitudinally in Hispanic youth over the transition from adolescence through emerging adulthood (EA).

Methods: Hispanic youth in Southern California (n=1457) completed surveys over 11 years, from 2006 to 2017, including three high school collection waves and five EA collection waves. Multinomial logistic regression models were used to explore the associations between perceived discrimination and cigarette and marijuana use cross-sectionally in high school and longitudinally in EA, controlling for gender, socioeconomic status, acculturation, and EA discrimination.

Results: Compared with those who never used cigarettes or marijuana in high school and EA, perceived discrimination in high school was a significant predictor of two patterns of use: high school initiators who discontinued use of smoking (RRR=1.677, 95%CI=1.292–2.176) and/or marijuana (RRR=1.464, 95%CI=1.162–1.844), and high school initiators who continued smoking (RRR=1.492, 95%CI=1.196–1.861) and/or marijuana use (RRR=1.249, 95%CI=1.052–1.482) into EA. For late initiators who did not use in high school but started in EA, perceived high school discrimination was a significant predictor for cigarette smoking (RRR=1.193, 95%CI=1.036–1.373) but not for marijuana use.

Conclusions: Perceived discrimination during adolescence is associated with substance use trajectories across both adolescence and EA. Culturally tailored prevention programs that provide training in skills to cope with psychosocial stressors could improve Hispanic adolescent health.

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6:15 PM-7:30 PM

RELATIONSHIPS BETWEEN PREGNANCY-RELATED WEIGHT CHANGES AND POSTPARTUM PSYCHOSOCIAL WELLBEING

Meghan Sharp, PhD¹, Chelsey Solar, PhD², Robert A. Carels, PhD, MBA, ABPP³, Christyn Dolbier, Ph.D.³¹Women's Medicine Collaborative, Lifespan, Providence, RI; ²VA Boston Healthcare System, Boston, MA; ³East Carolina University, Greenville, NC

Introduction: Healthy weight gain in pregnancy is important for maternal-fetal health. Postpartum, there is a high degree of societal pressure to lose residual gestational weight. Gestational weight gain and postpartum weight retention have been associated with increased experiences of weight discrimination and poor maternal wellbeing, but research in this area is scarce. Furthermore, internalized weight bias, or the application of stigma associated with high body weight to the self, is poorly understood in this population.

Method: Women ($N = 251$) who were between 6 and 12 months postpartum were recruited via social media advertisements for an online survey about perinatal weight experiences. The majority were White (93%), married (79%), and primiparous (61%) with $Mage = 29.02$. Measures: percent gestational weight gain, percent postpartum weight retention, modified Weight Bias Internalization Scale, Edinburgh Postnatal Depression Scale, Body Surveillance, and two subscales from the Childbearing Attitudes Questionnaire, Relationship with Husband and Interest in Sex.

Results: Women with lower prenatal BMI gained more weight in pregnancy ($r = -.63$, 95% CI $-.70$, $-.55$). Gestational weight gain and postpartum weight retention were positively correlated ($r = .33$, 95% CI $.20$, $.44$). In linear regression analyses using standardized variables, only partner relationship was associated with gestational weight gain ($B = .12$, 95% CI $.00$, $.25$). In contrast, postpartum weight retention demonstrated significant relationships with internalized weight bias ($B = .59$, 95% CI $.48$, $.71$), depression ($B = .22$, 95% CI $.84$, $.36$), body surveillance ($B = .17$, 95% CI $.04$, $.29$), and lower interest in sex ($B = -.28$, 95% CI $-.40$, $-.16$).

Conclusion: Postpartum weight retention and not gestational weight gain was significantly associated with poorer postpartum wellbeing. Healthy pregnancy weight is a recommended topic of conversation in routine perinatal care, while no recommendations exist for postpartum weight management. Results identify postpartum weight retention as an important health factor for discussion in postpartum medical care and an area of needed maternal health research.

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B376

6:15 PM-7:30 PM

EXPERIENCES OF WEIGHT BIAS AND REPRODUCTIVE HEALTHCARE UTILIZATION

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Recent qualitative research (Bombak et al., 2016) has found that women of child-bearing age experience weight stigma and fat shaming from their obstetrician-gynecologists. Although weight stigma has been found to be associated with other health and treatment-seeking behaviors, we know little about whether experiencing weight stigma or internalizing weight bias predicts reproductive healthcare. Utilizing a large sample from X Twin Registry, women of child-bearing age (i.e. 18-40 years of age) were recruited. A total of 1458 participants completed a scale of perceived weight discrimination (Hatzenbuehler et al., 2009) and a modified version of the Weight Bias Internalization Scale (WBIS-M; Pearl & Puhl, 2014). Participants were asked to report the date of their most recent Papanicolaou (Pap) smear test, pelvic exam, and mammogram. Results indicated that 7.2% ($n = 98$) of the women ever experienced weight-based discrimination while receiving medical care; a similar number reported experiencing weight-based discrimination in public ($n = 134$; 9.8%). Chi-square tests were used to examine differences among reception of reproductive healthcare based on history of weight-based discrimination. Results indicated that the reception of Pap smear tests did not differ based on history of experiencing weight-based discrimination in public settings, with 23.1% of women endorsing fairly often experiencing such discrimination and having never received a Pap smear test (compared to 4.4% of those who never experienced weight-based discrimination; $\chi^2(4) = 12.64$, $p < .05$). These results have implications for improving the interactions between reproductive healthcare providers and female patients, and will inform healthcare systems in understanding which obstacles women face in obtaining crucial medical services.

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6:15 PM-7:30 PM

PREIMPLANTATION GENETIC TESTING FOR ANEUPLOIDY: AN IN-DEPTH, QUALITATIVE STUDY OF THE DECISION-MAKING EXPERIENCE

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Objective: Individuals using *in vitro* fertilization (IVF) are faced with an expanding array of medical decisions, including the decision of whether or not to pursue preimplantation genetic testing for aneuploidy (PGT-A). PGT-A is a specialized technique to identify, before implantation, embryos created through IVF with an abnormal number of chromosomes, with the aim of improving pregnancy outcomes. For some, PGT-A may be a source of hope in an otherwise stressful process; however, it also presents a complex choice for individuals who may already feel decisional burden. Research on decision-making for PGT-A is sparse. To address this limitation, this study focuses on the decision-making experience of individuals undergoing IVF and considering PGT-A.

Methods: In-depth, qualitative interviews were conducted with eleven women and four men ($N = 15$) from 6 different states (mean age 37.6+/-6.2 years). Interviews were performed through hour-long video conference. Participants were predominantly White and non-Hispanic (94%) and highly educated. All were considering or had recently considered (< 6 months) PGT-A. Interviews were coded by four researchers using thematic analysis.

Results: Individuals considering whether or not to use PGT-A described the following as key sources of decisional conflict: (1) navigating differing information across healthcare providers, online forums, and personal networks; (2) weighing values opposing testing/selection against the goal of having a healthy baby; (3) balancing the cost of testing with other expenses and attempting to quantify the “value-added” of PGT-A; (4) anticipating and/or managing sub-optimal outcomes (e.g., having insufficient embryos); and (5) anticipating judgment by others. Decisional conflict was a source of stress, which was exacerbated or attenuated by individuals’ informational needs, support network, financial resources, and trust in provider, and varied according to the person’s stage of fertility treatment.

Conclusion: The decision whether or not to use PGT-A, while offering hope, can also increase decisional burdens for individuals going through IVF. Identifying those who face such difficulties and understanding how they manage decisional conflict can guide the development of appropriate strategies to support the increasing population that consider this option.

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6:15 PM-7:30 PM

HYSTERECTOMY STATUS DOES NOT IMPACT ABILITY TO LOSE AND MAINTAIN WEIGHT LOSS DURING A WEIGHT MANAGEMENT INTERVENTION

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Background: Women who have had a hysterectomy are at a higher risk of weight gain compared to women who have not had a hysterectomy. Hysterectomies are often conducted in women in their 40s as they are premenopausal or perimenopausal, a time point where weight gain is common. The combination of age, hormonal changes and surgery may make it difficult for women to maintain weight. Thus, weight management interventions could be helpful for women to lose weight following a hysterectomy. To our knowledge, there has been no research comparing weight loss and weight maintenance in women who have had a hysterectomy versus women who have not had a hysterectomy.

Methods: This was a secondary analysis conducted in overweight/obese women ($N=145$) initiating a 3-mo. behavioral weight loss intervention which included weekly face-to-face behavioral counseling, reduced energy intake (~1200-1500kcal/d) and increased exercise (100 min/wk). Participants completing the 3-mo. intervention and achieving clinically meaningful weight loss ($\geq 5\%$) began a 12 mo. behavioral weight maintenance intervention and were randomized to 150, 225, or 300 min/wk of moderate intensity exercise. At baseline, participant’s history of a hysterectomy and hormone therapy use was self-reported. Anthropometrics were measured by trained research staff and body composition was measured using DXA. Analysis of variance was conducted to compare weight regain, physical activity, dietary intake and body composition in women who had a hysterectomy and did not have a hysterectomy using SAS 9.4.

Results: Thirty women self-reported having a hysterectomy while 115 did not have a hysterectomy. Women who had a hysterectomy (H+) were older (47.3 ± 5.0 years old) compared to women without a hysterectomy (H-) (41.7 ± 8.7 years old) ($p=0.001$). There were no differences in group randomization by hysterectomy status ($p=0.532$). There were no differences in initial percent weight loss ($-3 - 0$ mo.) H+ ($-8.28\% \pm 2.78$) compared to H- ($-9.24\% \pm 2.78$) ($p=0.234$) or weight regain ($0 - 12$ mo.) in H+ ($2.75\% \pm 7.2$) compared to H- ($2.75\% \pm 7.3$) ($p = 0.452$) after controlling for age and hormone replacement therapy use. Percentage change in fat mass did not differ between H+ ($-1.74\% \pm 4.73$) and H- ($-2.78\% \pm 4.22$) ($p=0.591$). There were no differences in physical activity and dietary intake ($p=0.685$, $p=0.729$).

Conclusions: Women who have had a hysterectomy can successfully lose and maintain weight loss just as well as women who have not had hysterectomy.

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6:15 PM-7:30 PM

EXPLORING THE RELATIONSHIP BETWEEN MATERNAL PERCEIVED DISCRIMINATION DURING CHILDBIRTH AND LABOR DURATION

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Prolonged labor is associated with risks of extensive and prevalent adverse maternal and neonatal health outcomes, including an increased risk of cesarean delivery. Maternal psychological stress during childbirth leads to increased catecholamine production (i.e., epinephrine), which is associated with slower labor progression due to lower uterine contractility. Perceived discrimination from healthcare providers may be one such source of stress. The present study explores whether maternal perceived discrimination during childbirth due to 1) race, ethnicity, cultural background or language, 2) health insurance status, or 3) a patient-provider difference of opinion regarding care might explain additional variance in labor duration above and beyond the influence of known predictors of labor duration (e.g., nulliparity, birthweight, labor induction, labor augmentation, and epidural use). Cross-sectional, retrospective data from a sample of 1854 sociodemographically diverse women ($M=29.02$, $SD=6.00$) were utilized to complete three hierarchical multiple regression analyses to test this prediction. Contrary to hypotheses, the present study revealed no evidence of a unique relationship between perceived discrimination and labor duration. These results suggest that further research, utilizing more rigorous methodology including objective measures (e.g., ecological momentary assessment (EMA) of perceived discrimination and use of medical record data to reliably determine labor duration) that may complement traditional self-report indices, is required in order to explore this question adequately and comprehensively.

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6:15 PM-7:30 PM

MALE PARTNERS' ANTENATAL CARE ATTENDANCE AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN NORTHERN TANZANIA

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In Tanzania, men are encouraged to attend the first antenatal care (ANC) appointment and test for HIV with their pregnant partner. Research has indicated the value of male engagement in pregnancy care, including for outcomes related to prevention of mother-to-child transmission of HIV (PMTCT). Despite the potential value of male engagement, some women face barriers to bringing a male partner to care, which may lead them to being disadvantaged in receiving clinical services. The goal of this study was to examine male partner engagement in ANC and identify psychosocial characteristics of pregnant women that are associated with bringing a male partner to the first ANC appointment. Participants ($n=579$) were pregnant women with a negative or unknown HIV status attending a first ANC appointment at one of two government clinics in Moshi, Tanzania. Participants completed a structured survey prior to receiving standard of care and routine HIV testing, which included questions about whether they presented that day with a male partner, sociodemographic characteristics, and psychosocial constructs (e.g., history of interpersonal violence, depression, partner support, anticipated HIV stigma). Factors that were significantly associated with presenting to ANC with a male partner in univariate analyses ($p < 0.10$) were included in a multiple logistic regression model. Participants ranged in age from 18 to 43 ($M=25.7$, $SD=5.6$). Less than half (48.7%) had education beyond the primary level. Most participants had been tested for HIV previously (68.9%). Over half of participants (57.5%) presented to ANC with a male partner. In univariate analyses, presenting with a male partner was associated with age, religion, level of education, marital status, first pregnancy, prior HIV testing, history of interpersonal violence, partner support, and anticipated HIV stigma. The final multivariable model indicated that women had significantly greater odds ($p < .05$) of presenting with a male partner if they were of the Muslim religion ($OR=1.7$, 95% CI: 1.2-2.5) or married ($OR=4.1$, 95% CI: 2.7-6.2); women had less odds of presenting with a male partner if they were older ($OR=.92$, CI: .88-.96). Findings suggest that older pregnant women and women with less stable partnerships may be disadvantaged by policies and procedures encouraging partner attendance in Tanzania. Existing policy may lead some women to present late to ANC, which has implications for maternal and child health, including PMTCT.

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Friday April 3rd, 2020 8:00 AM-9:15 AM

Symposium 35

8:00 AM-9:15 AM

PRESIDENTIAL SYMPOSIUM: ACCELERATING SCIENCE AT THE INTERNATIONAL LEVEL: BEHAVIORAL MEDICINE IN INTEGRATED PRIMARY CARE

William Sieber, Ph.D.¹, Christopher L. Hunter, Ph.D., ABPP², Wilson D. Pace, MD³, Henriëtte E. van der Horst, prof.dr.⁴

¹UC San Diego Collaborative Care, SAN DIEGO, CA; ²Defense Health Agency, Arlington, VA; ³DARTNet Institute, Aurora, CO; ⁴Amsterdam UMC, Amsterdam, Noord-Holland, Netherlands

While SBM and ICBM members have often led the scientific advances in promoting people's health through research and promoting public policy, the challenges are daunting as to how to accelerate the demonstration of behavioral medicine interventions in real-world settings. Integrated behavioral health in primary care is a major opportunity for behavioral medicine researchers to show impact on patient populations who have historically had low access to services. Translating behavioral medicine research into health care settings is difficult due to fragmented healthcare systems and numerous factors that affect implementation in any given setting. Aggregation of data across health systems will accelerate translational research and such data aggregation at both national and international levels will advance our understanding of the elements important to effecting health behavior globally.

In this Presidential symposium speakers from various health systems and countries will share their lessons learned as to implementing behavioral medicine research to clinical populations, identify challenges, and propose next steps in building collaborations that facilitate progress. Each speaker will address the clinical, operational, methodological, and technical challenges of this work. At the end, a framework for international collaboration will be proposed, inviting symposium attendees to participate in an international research network designed to accelerate behavioral medicine as a science.

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1

8:00 AM-9:15 AM

BEHAVIORAL MEDICINE STANDARDIZATION AND IMPLEMENTATION IN THE MILITARY HEALTH SYSTEM: POLICY AND PATHWAY IMPLEMENTATION

Christopher L. Hunter, Ph.D., ABPP¹

¹Defense Health Agency, Arlington, VA

The military health system provides services for over 3 million people in military treatment facility primary care clinics. Since 2013, policy has mandated the integration of full-time primary care behavioral health providers (psychologist and social workers) into primary care clinics with 3000 or more empaneled adults. This presentation will cover: 1) Health system policy as a necessary, but not sufficient baseline for behavioral medicine clinical quality improvement. 2) EHR standardization in 278 clinics, to include behavioral medicine clinical decision support and ability to pull discrete data to assess population penetration and patient outcome. 3) The development and implementation of a system wide primary care stepped-care pain pathway designed to change patient-centered medical home evidence-based assessment and intervention for acute and chronic pain. 4) Discuss implementation and patient outcome evaluation and how data from multiple sites can be used to analyze patterns of impact to provide actionable data for continued quality improvement and service delivery. 5) End with a discussion of how system EHR and training standardization and implementation outcome can be shared with other systems to accelerate best practice dissemination and implementation efforts.

2

8:00 AM-9:15 AM

ELECTRONIC DATA EXTRACTION AND CURATION FOR CLINICAL CARE AND RESEARCH

Wilson D. Pace, MD¹

¹DARTNet Institute, Aurora, CO

To assist attendees in understanding the technical aspects of establishing and leveraging a network of clinical sites contributing data for accelerated science. The presenter will talk about all phases of data acquisition and curation from multiple electronic sources (i.e., healthcare systems). The talk will include extraction activities from multiple different EHRs, from data repositories and other electronic data sources. The use of CCDs and CCDAs for data extraction as well as the use of FHIR will be covered as data sources. Transformation activities across these disparate sources will be discussed in terms of both data structure and nomenclature perspective (e.g., shared behavioral medicine terminology). Data loading to a common data model will be discussed, with the OMOP v6 model to be used for demonstration purposes. Current experience with a national project on integrated behavioral health (IBH-PC) collecting data from over 40 clinics across the U.S. will also be highlighted. Handling of linked data, such as PHQ-9 scores, will be outlined. Finally, data quality approaches will be highlighted for dealing with large data sets, as well as ideas for data sharing back out to participating sites for their own quality improvement/research activities. The data quality discussion will cover differences between classic, RCT statistical data sets and data science approaches to handling data.

3

8:00 AM-9:15 AM

HOW TO AGGREGATE AND USE ROUTINE CARE DATA FROM PRIMARY CARE TO OPTIMIZE CARE

Henriëtte E. van der Horst, prof.dr.¹

¹Amsterdam UMC, Amsterdam, Noord-Holland, Netherlands

For several decades now, all Dutch university general practice departments closely collaborate with general practitioners in academic networks of general practices. All departments have large databases of routine care data at their disposal. A constant effort is being made to optimize the quality of the recording and coding of the routine care data. The departments have, in collaborations with the general practitioners, developed methods to use these routine care data for answering research questions, for identifying participants for specific research projects, for optimizing care through providing information on how practices perform in specific areas and in the last few years also for teaching purposes. The aggregation of data collected at multiple sites all over the country contributes to quality improvement in the care for people with highly prevalent conditions such as obesity, diabetes and medically unexplained symptoms, and thus to the science of behavioral medicine. In my presentation I will provide an overview and examples of the ways in which these routine care databases are being used. I will address some issues of clinical quality and implementation of evidence-based interventions in primary care in the Netherlands. I will also elaborate on facilitators and barriers in the interaction between research and practice, bi-directionally.

Symposium 36

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

ADVANCING THE RESEARCH AGENDA: CURRENT EPIDEMIOLOGY, MEASURES AND INTERVENTIONS FOR SEDENTARY BEHAVIOR

Dori E. Rosenberg, PhD, MPH¹, Sarah K. Keadle, PhD, MPH², Matthew P. Buman, PhD³, Whitney A. Welch, PhD⁴, Jason Fanning, PhD⁵, Lisa Cadmus-Bertram, PhD⁶

¹Kaiser Permanente Washington Health Research Institute, Seattle, WA; ²Cal Poly San Luis Obispo, San Luis Obispo, CA; ³Arizona State University, Phoenix, AZ; ⁴Northwestern University Feinberg School of Medicine, Chicago, IL; ⁵Wake forest university, Winston salem, NC; ⁶University of Wisconsin - Madison, Madison, WI

High sedentary time in the general population has prompted a plethora of new research in the field of sedentary behavior change science. In this session, we will host a series of brief presentations to update audience members on current measurement approaches, epidemiologic evidence, and interventions to address high sedentary time. In this symposium, sponsored by SBM's Physical Activity SIG, we have assembled a series of brief presentations (10 minutes each) to update audience members on current measurement approaches, epidemiologic evidence, and interventions to address high sedentary time. Dr. Kozey Keadle will provide an overview of epidemiologic evidence to date. Dr. Matthew Buman will review measurement issues in sedentary behavior research. Dr. Welch will describe the findings of an ecological momentary assessment study examining sedentary behaviors in relation to chemotherapy-related symptoms. Dr. Fanning will provide an overview and results of a pilot trial using an iterative user-centered development process to promote movement throughout the day. Dr. Rosenberg will review the methods of a randomized controlled trial to reduce sedentary time in older adults with obesity. Finally, our discussant (Dr. Cadmus-Bertram) will summarize key themes and future research directions. The presentations will be followed by an interactive discussion with attendees.

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METHODS FOR A RANDOMIZED CONTROLLED TRIAL TO REDUCE SITTING TIME IN OLDER ADULTS WITH OBESITY

Dori E. Rosenberg, PhD, MPH¹, Mikael Anne Greenwood-Hickman, MPH², Jing Zhou, PhD², Callie Walsh-Bailey, MPH², Julie Cooper, MPH², Andrea Cook, PhD², David Arterburn, MD, MPH², Bev Green, MD, MPH², Jacqueline Kerr, PhD³, Jennifer McClure, PhD¹

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Background: Older adults with obesity have high levels of sitting time and substantial barriers to physical activity. Small sitting reduction trials have demonstrated efficacy in older adults, but larger and longer trials are needed to establish whether sitting reductions are maintained over time and to elucidate health effects. This presentation will provide an overview of the methods and sample characteristics for an on-going trial of sitting reduction in older adults with obesity.

Methods: Participants will include 284 older adults with a body mass index greater than 30 kg/m². Participants will be randomized to a sitting reduction intervention (i-STAND) or a healthy living attention control condition for 6 months and will be followed for 6 additional months (12 total). The i-STAND group will receive 10 health coaching contacts, workbooks, portable standing desks and wrist-worn inactivity prompting devices to reduce their sitting. At 6 months i-STAND participants will be re-randomized to receive 5 booster sessions or no further coaching contact. The attention control group will receive 10 health coaching contacts, a workbook, and content on various healthy living topics unrelated to sedentary behavior. The primary outcomes are comparative changes in activPAL measured sitting time and blood pressure. Additional outcomes include standing time, steps, fasting glucose, and HbA1c.

Results: As of August 31, 2019, 50 participants have been randomized (24 to i-STAND; 26 to Healthy Living). Recruitment will continue through September 2021. The population has a mean age of 67 (range 60-85), is 63% female, 94% white, and has a mean BMI of 34.8 (SD = 4.9). Mean baseline activPAL sitting time is 10.7 (SD 1.9) hours/day, standing time 3.7 (SD 1.6) hours/day, average sitting bout length = 17.1 (SD 8.2) minutes/day, stepping time 1.3 (SD 0.5) hours/day, steps per day = 5902 (SD 2478), summarized from 46 people to-date.

Results and Conclusion: This long-term trial of sitting reduction will provide novel data on the maintenance of sedentary behavior change. Furthermore, we will examine the cardiometabolic health effects of sitting reduction in a population at high risk for cardiovascular and metabolic conditions.

2

8:00 AM-9:15 AM

STATE OF THE OBSERVATIONAL EVIDENCE LINKING SEDENTARY BEHAVIOR WITH POOR HEALTH: GAPS AND INTERVENTION TARGETS.

Sarah K. Keadle, PhD, MPH¹

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The 2018 Physical Activity Guidelines (PAG) for Americans included, for the first time, a comprehensive review of the evidence linking sedentary behavior and health. Based primarily on the observational evidence linking sedentary behavior with several chronic diseases, the PAG includes a recommendation for all adults to “move more, sit less”. Gaps in epidemiologic studies and a lack of randomized clinical trials precludes more specific recommendations. Several recent studies have applied analytic techniques such as physical behavior indexes, compositional and isotemporal techniques to estimate the impact of replacing sedentary behavior with different types of physical activities on health outcomes. These studies have consistently demonstrated that the least active (i.e., those engaging in little or no exercise) have greater reduction in chronic disease risk or mortality when replacing sedentary time with light intensity activity. There is also a need to consider the differential health risks and determinants of different types of sedentary behavior when designing interventions. The PAG report identified moderate evidence for the efficacy of workplace interventions to reduce sedentary time, but fewer studies have successfully reduced discretionary time, and relatively few have targeted television viewing, which has the strongest health risks and consumes most of leisure time. This presentation will provide an update on the observational evidence linking sedentary behavior and negative health outcomes and conclude with the implications of this evidence for designing interventions to reduce sedentary behavior.

3

8:00 AM-9:15 AM

SITTING, STANDING, AND MOVING: CONCEPTS AND MEASUREMENT OF SEDENTARY BEHAVIOR IN BEHAVIORAL INTERVENTIONS

Matthew P. Buman, PhD¹

¹Arizona State University, Phoenix, AZ

Sedentary behavior - which has been defined by the Sedentary Behavior Research Network (SBRN, 2018) as waking behaviors in the seated/lying position at a low energy expenditure (< 1.5 metabolic equivalents) - has emerged as an important public health target. Epidemiologic and experimental evidence depends on valid and reliable measurement to accurately inform the evidence-based guidelines and recommendations and the evaluation of intervention strategies. The majority of the current evidence base relies on self-report or device-based measures. Self-report measures of sedentary time have recall bias limitations and typically do not comprehensively assess contexts of sedentary time (e.g., screen time, workplace, transport, social activities), thus suffer from substantial underreporting. There also appears to be differential bias by context, such that television time is often more accurately reported than other common forms of sedentary behavior. Device-based measures - both research and consumer grade devices - often rely on a movement-based threshold to determine sedentary time and therefore do not capture the postural component of the SBRN definition. Furthermore, these devices may misclassify important behaviors related to sedentary behavior including lying, sleeping, standing, or may not fully capture the patterns in which sedentary behavior is accrued including sedentary bout duration and sit-stand transitions. This presentation will provide an update on the current best practices and emerging methods in sedentary behavior measurement, including: optimal uses of self-report methods for assessing sedentary behavior, a review of commonly used device-based measures of sedentary behavior (both research and consumer grade) and their strengths and weakness, and emerging methods to improve sedentary behavior measurement and its contexts (e.g., machine-learning) and the accessibility of these methods for behavioral researchers. Data from self-report and device-based measures in several large behavioral intervention trials that targeted sedentary behavior will be used to illustrate these concepts and to reinforce some of the practical considerations of implementing sedentary behavior measures for evaluating behavioral interventions.

4

8:00 AM-9:15 AM

LONGITUDINAL EXAMINATION OF SEDENTARY BEHAVIOR AND SYMPTOM REPORTING IN BREAST CANCER PATIENTS UNDERGOING CHEMOTHERAPY

Whitney A. Welch, PhD¹, Kara L. Gavin, PhD², Juned Siddique, DrPH¹, Jason Fanning, PhD³, Payton E. Solk, BA¹, Marilyn Lu, BA¹, Jennifer H. La, Bachelor of Science in Health Systems Management¹, Cesar A. Santa-Maria, MD, MSCI⁴, William Gradishar, MD⁵, Seema A. Khan, MD⁵, Swati Kulkarni, MD¹, Siobhan M. Phillips, PhD, MPH¹

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Introduction: Emerging data suggest chemotherapy (CT) induced symptoms may be associated with greater daily time spent in sedentary behavior (SB) post-treatment for breast cancer. However, little is known about the relationship between symptom burden and SB during CT. The purpose of this study was to examine the relationship between daily fluctuations in symptoms and SB during CT for breast cancer.

Methods: Breast cancer patients (N=68, Mage= 48.5±10.4 years) undergoing chemotherapy (CT) wore an Actigraph accelerometer for 24hours (on the hip during the day, wrist while sleeping) to assess daily SB and completed prompts assessing symptoms (affect, anxiety, depression, fatigue, pain, and physical and cognitive functioning) for 10 consecutive days (3 days pre-, day of, and 6 days post-CT) at the beginning, middle and end cycles of CT. Separate mixed models assessed the between person (BP) and within person (WP) associations of current day symptoms with minutes of SB measured on 1) the same day and 2) the next day, controlling for relevant covariates.

Results: BP ratings of affect (b=-14.65, p=0.01), fatigue (b=41.42, p=0.01), activities of daily living (ADL) (b=26.43, p=0.03) and walking (b=29.61, p=0.02) physical function were significant for same day SB, such that those with worse symptom ratings spent more time in SB. WP results revealed a significant association between affect (b=-10.42, p< 0.001), anxiety (b=5.88, p=0.002), fatigue (b=27.31, p< 0.001), ADL (b=29.02, p< 0.001) and walking (b=28.86, p< 0.001) physical function, pain (b=5.93, p< 0.001), and cognitive functioning (b=-19.94, p< 0.001) with same day SB. Poorer than average symptom ratings on a given day were associated with more SB that day. Previous day reported symptoms and next day SB results indicated a significant BP association for ADL (b=25.93, p=0.03) and walking (b=28.60, p=0.03) physical function (i.e. those with poorer physical functioning spent more time in SB). WP results indicate a significant relationship between previous day anxiety (b=-10.26, p< 0.001) ADL physical function (b=-6.01, p=0.001) and next day SB (i.e., worse than average symptom ratings the prior day were associated with more SB the next day).

Conclusion: Daily WP and BP variations in symptoms were associated with SB during CT for breast cancer. Future work should further explore the temporal relationship between symptoms and SB to identify SB reduction intervention approaches that incorporate tailoring to daily symptom burden during CT for breast cancer.

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8:00 AM-9:15 AM

PROMOTING DAY-LONG MOVEMENT IN OLDER ADULTS WITH CHRONIC PAIN: THE MORPH STUDY

Jason Fanning, PhD¹, Amber Brooks, MD², W. Jack Rejeski, PhD³, Barbara Nicklas, PhD²¹Wake forest university, Winston salem, NC; ²Wake Forest School of medicine, Winston-Salem, NC; ³Wake Forest University, Winston-Salem, NC

Sitting is a common response to the sensation of pain, but extended bouts of sitting often produce stiffness, weight gain, and inflammation. This cycle results in high rates of sedentary behavior among individuals with chronic pain and increases the individual's risk for a host of chronic diseases. One unique strategy for reducing the presence of sustained bouts of sitting in older adults with chronic pain is to promote the accumulation of light- and moderate-to-vigorous intensity physical activity throughout the day. To accomplish this goal, individuals must develop an awareness of how they pattern their movement and sitting during the day and should be given access to intervention tools that incentivize consistent movement rather than in a single discrete bout. The purpose of the MORPH pilot trial is to leverage an iterative user-centered development process to build a digital health-supported, social cognitive theory-driven program meant to promote weight loss and movement throughout the day. MORPH is comprised of 12 weekly group telecoaching sessions discussing topics related to pain, physical activity, and healthy eating. These sessions are supported by a smartphone application paired with a Fitbit activity monitor. Fitbit data are streamed into the app in real time, providing visual feedback on activity patterning, and participants set multiple daily activity goals that promote movement before lunch, before dinner, and after dinner. During the first phase of the trial, the MORPH intervention was developed in conjunction with a small group ($N = 5$) of older adults with chronic pain. Each participant provided feedback on use and usability of the smartphone app, and then utilized the intervention materials for one week in the home to ensure real-world usability and to provide feedback on experiences. Changes were made between participants, and recruitment ceased when no substantive changes were required. Next, a second small group ($N=5$) piloted the full 12-week intervention to identify lingering use and usability issues. A final sample ($N=30$) were recruited to participate in the second phase of the study wherein these individuals were randomly assigned to an immediate 12-week intervention condition or to a wait-list control. This presentation will focus on intervention-related changes in physical activity parameters (i.e., daily steps, minutes of physical activity) and sedentary behavior parameters (i.e., average bout length, sedentary breaks) collected before and after the 12-week intervention using ActivPAL devices. Additionally, changes in these parameters during the intervention will be explored using the Fitbit data collected serially throughout the program.

Symposium 37

8:00 AM-9:15 AM

FEMALE SEXUAL HEALTH AND CANCER: BRIDGING THE GAP TO EFFECTIVE EVIDENCE-BASED BEHAVIORAL INTERVENTIONS

Jennifer B. Reese, PhD¹, Kristen M. Carpenter, PhD², Sharon L. Bober, Ph.D.³, Stephen J. Lepore, PhD⁴¹Fox Chase Cancer Center, Philadelphia, PA; ²Ohio State University, Upper Arlington, OH; ³Dana-Farber Cancer Institute, Boston, MA; ⁴Temple University, Philadelphia, PA

Purpose: Despite decades of observational research demonstrating that sexual dysfunction is a prevalent source of distress for women with cancer, effective evidence-based interventions addressing this problem still lag. As more women become long-term survivors, it is essential that efforts move from describing this problem to developing effective interventions. Understanding what may lead women to seek help for sexual problems and developing targeted interventions to meet women's needs are essential for bridging this significant gap in cancer care. The objective of this symposium is to describe several projects at the cutting edge of research developing and evaluating novel behavioral interventions for cancer-related sexual problems for women with cancer.

Method: The following empirical findings will be presented: (1) Data from a sample of breast cancer outpatients participating in a sexual health communication intervention characterizing baseline levels of sexual help-seeking and examining the extent to which self-efficacy for communicating clinically about sexual concerns is associated with sexual help-seeking ($N=144$); (2) Results of a single-arm trial evaluating a brief, targeted psychosexual intervention for young breast cancer survivors on ovarian suppression (OS) treatment ($N = 20$); and (3) Results of a replication study testing the feasibility and preliminary efficacy of a group psychosexual intervention for improving sexual outcomes among women with breast cancer ($N = 28$).

Results: Findings clarify key aspects of women's sexual help-seeking after cancer, including the role of self-efficacy for communicating about sexual issues, and demonstrate positive effects of novel behavioral interventions for female cancer survivors across a variety of sexual and psychosocial outcomes, including clinically significant sexual dysfunction and emotional distress.

Conclusion: Results underscore the importance of developing that can address sexual health for women with cancer from different angles, including through offering education and skills directly, as well as through educating women and providers on how to communicate effectively about sexual health after cancer. Research implications and important future directions will be discussed. The discussant, an expert in clinical trials of psychosocial interventions in cancer, will bring his perspective to the discussion of how to bridge the gap to effective evidence-based behavioral interventions addressing sexual health for women after cancer.

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8:00 AM-9:15 AM

UNDERSTANDING SEXUAL HELP-SEEKING FOR WOMEN WITH BREAST CANCER: HOW DO WOMEN WHO SEEK HELP DIFFER FROM THOSE WHO DO NOT?

Jennifer B. Reese, PhD¹, Kristen A. Sorice, BA¹, Whitney Pollard, BA², Lauren A. Zimmaro, PhD³, Mary Catherine Beach, MD, MPH⁴, Stephen J. Lepore, PhD⁵

¹Fox Chase Cancer Center, Philadelphia, PA; ²Fox Chase Cancer Center; ³Fox Chase Cancer Center, Harleysville, PA; ⁴Johns Hopkins School of Medicine, Baltimore, MD; ⁵Temple University, Philadelphia, PA

Background/Objectives: There are considerable barriers to women surviving breast cancer (BC) in seeking help for sexual concerns. The objectives were to determine, in a sample of BC outpatients, (1) how commonly women sought help for sexual concerns, either from a health care provider (HCP), a non-HCP (spouse/partner/relative/friend), or alternate sources (internet/print materials/radio), and (2) whether women who sought help versus did not seek help differed in their level of sexual concerns or in their confidence in talking with their BC provider about sexual health (communication self-efficacy).

Methods: As part of a sexual/menopausal health communication intervention trial, BC patients completed baseline web-based self-report surveys assessing socio-demographic characteristics, help-seeking behavior for sexual concerns in the past 30 days [3 items; 1: discussed with HCP; 2: discussed with non-HCP; 3: sought information from alternate sources], and communication self-efficacy (score range [0-20]). Sexual concerns were measured during screening using a validated item assessing problems with sexual interest, enjoyment or performance (score range [0-10]). Comparisons between women who sought help versus did not were conducted using Chi-square analyses or t-tests.

Results: 144 women (M age=56.0; 62% partnered; 67% White; 15% Stage IV) participated, with 67% reporting sexual concerns (M=4.7). More women sought help from non-HCPs (59%) than from HCPs (24%) or alternate sources (21%). Women who sought help from any source reported significantly worse sexual concerns (M=6.1) than those who did not (M=3.3, $p<.001$). Surprisingly, women who discussed sexual concerns from their HCP reported comparable communication self-efficacy (M=14.4) as women who did not (M=15.3, $p=.38$). However, women who sought help from a non-HCP or alternate sources had significantly lower communication self-efficacy (M=13.6 and 13.0, respectively) than those who did not seek help from a non-HCP (M=16.1, $p=.004$) or alternate sources (M=15.6, $p=.03$), respectively.

Conclusions: Findings suggest that women tend to seek help for sexual concerns when such concerns are more severe, that they most often seek help from non-HCPs as compared to HCPs, and that they may seek help from sources other than HCPs partly because they lack the self-efficacy to do so from a HCP. Interventions are needed to improve women's communication self-efficacy and to educate both HCP's and women's caregivers on BC-related sexual health so these groups can effectively provide such support.

2

8:00 AM-9:15 AM

SEXUAL HEALTH AND RELATIONSHIP ENHANCEMENT (SHARE) FOR WOMEN WITH BREAST CANCER: RESULTS FROM A CLINICAL TRIAL

Kristen M. Carpenter, PhD¹, Hannah Holmes, PhD², Lora Black, PhD³, Katherine Conroy, BA⁴

¹Ohio State University, Upper Arlington, OH; ²Appalachian State University; ³University of Kansas Medical Center; ⁴University of Washington

Objectives: Test a group psychosexual intervention -- Sexual Health and Relationship Enhancement (SHARE) -- designed for gynecologic cancer survivors in a sample of breast cancer survivors to determine feasibility and efficacy.

Methods: Participants were breast cancer survivors (N = 28). The majority (53.6%) was diagnosed at stage I (stage II: 35.7%, stage III: 10.7%). The participants were primarily Caucasian (75%) with an average age of 50.6 years (SD = 11.7, range = 29-79) and the majority were partnered (75%). Intent-to-treat (ITT) analyses were conducted for treatment outcomes. Using all available data, mixed effects modeling tested for change in treatment outcomes from the initial assessment to 3-, 6-, and 9-month assessments. Cohen's d effect sizes were reported at post-treatment (6 months) and follow-up (9 months). The reliable change index was used to determine whether reliable clinical change had been achieved for each patient.

Results: The 12-session attendance rate was 23%. The mean number of SHARE sessions attended was 9 (SD=3.2). The rate therapy dropout was 10% (n=3). The patients viewed the treatment as helpful; average helpfulness ratings were 2.5 out of 3.0 (SD=0.4) and 84% of ratings fell in the moderately to very helpful range. Using a 0 to 10 point scale for cohesion, the means were 8.0 (SD=1.1) for involvement in the therapy experience and 9.2 (SD=1.1) for felt support. Significant linear effects of time (improvements) were seen for sexual function, satisfaction, and distress ($p<.001$); sexual behavior did not change. Effect sizes of change from baseline to post-treatment and follow-up on significant outcome measures were large ($d=0.75-1.06$). Most participants' improvement in sexual function (65.2%) and sexual distress (66.7%) was reliable. Almost half of participants reported clinical levels of sexual distress at baseline that decreased to sub-clinical levels at follow-up, and 16.7% of participants had baseline clinical sexual dysfunction that was sub-clinical at follow-up.

Conclusions: SHARE-B is feasible and efficacious for addressing sexual morbidity following breast cancer, indicating it is likely possible to deliver to women with a variety of disease sites improving scalability of the intervention.

3

8:00 AM-9:15 AM

IMPROVEMENT IN SEXUAL FUNCTION AFTER OVARIAN SUPPRESSION: SEXUAL HEALTH AND REHABILITATION AFTER OVARIAN SUPPRESSION TREATMENT FOR YOUNG BREAST CANCER SURVIVORS (SHARE-OS).

Sharon L. Bober, Ph.D.¹, Christopher Recklitis, Ph.D, MPH¹¹Dana-Farber Cancer Institute, Boston, MA

Objectives: Each year, tens of thousands of young breast cancer (BC) patients confront the difficult decision to medically suppress their ovarian function and undergo abrupt, premature menopause to reduce their risk of cancer recurrence. Unlike natural menopause, young women undergoing ovarian suppression (OS) face severe and disruptive side effects. Profound sexual dysfunction is one of the most prevalent and distressing side effects of OS for young BC survivors. Unmanaged OS-related sexual dysfunction is also the primary predictor for non-adherence to this potentially life-saving treatment. The need for targeted sexual health intervention for this population is pressing because the use of OS in young women is rapidly expanding. We developed and tested a brief, psychosexual intervention targeted to manage sexual dysfunction after OS in young BC survivors.

Methods: 20 young BC survivors with sexual dysfunction received a single half-day group intervention that included sexual health rehabilitation strategies, body awareness exercises and elements of mindfulness-based cognitive therapy (MBCT) skills to address sexual symptoms. The 4-hour group meeting was followed by a single tailored booster telephone call one-month later. Assessment measures were completed at two time points: Baseline and 2-months post-group intervention. The Female Sexual Function Index (FSFI) assessed sexual functioning and the Brief Symptom Inventory (BSI-18) captured psychological distress.

Results: Analyses examined changes from Pre- to Post-intervention. Total FSFI scores improved significantly from baseline to follow-up ($n=19$, $p<.02$). Effect sizes were moderately large indicating a significant improvement in women's sexual function post- intervention ($d=.5$). Anxiety as measured by the BSI-18 was also significantly improved at the 2 -month ($p<.000$) time-point, compared to Baseline 1.

Conclusions: Significant improvements in overall sexual functioning and psychological distress were observed 2 months post-intervention, suggesting preliminary efficacy of this brief, targeted intervention to reduce distressing sexual dysfunction in young BC survivors on OS treatment. These promising results demonstrate that a randomized trial of START-OS is warranted.

Symposium 38

8:00 AM-9:15 AM

THE ROLE FOR SBM IN 'THE LANCET PSYCHIATRY COMMISSION: A BLUEPRINT FOR PROTECTING PHYSICAL HEALTH IN PEOPLE WITH MENTAL ILLNESS'

Philip B. Ward, PhD¹, Joseph Firth, PhD², Scott B. Teasdale, PhD; BNutrDiet; BAppSci (Nutr&Food)³, Felipe Schuch, NA⁴, Simon Rosenbaum, BSc, PhD⁵, Jacob D. Meyer, PhD⁶

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All across the world, people with severe mental illness die 15-30 years younger than the general population. However, this gap in life expectancy is primarily due to physical diseases, rather than mental health causes. Although these severe inequalities in physical health is gaining more attention than ever, the large disparities in health outcomes for those with mental illness have persisted overtime, and may even be worsening in some regions. For these reasons, the 2019 Lancet Psychiatry Commission¹ was assembled to create "A Blueprint for Protecting Physical Health in People with Mental Illness". To do this, The Lancet Psychiatry Commission brought together an international team of researchers, clinicians, and key stakeholders, aiming to summarize advances in understanding on this topic, and present clear directions for health promotion, clinical care and future research.

The Commission's aims are addressed across five separate Parts, as follows;

- Part 1: "Its More Than Premature Mortality"; Determining the scope and burden of physical health inequalities in psychiatric disorders.
- Part 2: "Identifying Key Pieces of the Puzzle"; Identifying modifiable factors and promising behavioral health targets for improving health outcomes.
- Part 3: "Improving Prescribing Practices"; Understanding, avoiding and mitigating side-effects of psychotropic treatment.
- Part 4: "Going Multi-Disciplinary on Multi-Morbidity"; Implementing health behavior change for staff and service-users, and
- Part 5: "Innovations in Integration"; examining how physical health interventions can be integrated flexibly across mental health settings.

Collectively the findings of the Commission have produced an array of novel and promising directions for health policy, clinical services and future research for protecting physical health in people with mental illness. For this symposium, key findings from Parts 1-5 of the Commission will be presented with specific relevance to actionable implications for SBM, and behavioral health initiatives in general. Discussion with the audience will be encouraged, and hard printed copies of the full Commission will be available following the event.

¹ Firth J, Siddiqi N, Koyanagi A, Siskind D, Rosenbaum S, Galletly C, et al. (2019). The Lancet Psychiatry Commission: A Blueprint for Protecting Physical Health in People with Mental Illness. *The Lancet Psychiatry*, 6(8): 675-712.

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- 1** **8:00 AM-9:15 AM**
- THE BURDEN OF POOR PHYSICAL HEALTH IN MENTAL ILLNESS: BACKGROUND TO THE COMMISSION**
- Philip B. Ward, PhD¹
- ¹UNSW, Sydney, New South Wales, Australia
- In order for the Lancet Psychiatry Commission to present novel solutions for improving physical health outcomes in people with mental illness, it was firstly important to aggregate and improve our understanding on the co-occurrence of physical and mental illness. Thus, the first talk of the symposium will describe the background and rationale for Part 1 of the Commission, and explain the outcomes of the priority-setting activities undertaken to determine the Commission's scope. In order to identify the need for physical health improvement across many different classes of mental illness, we applied a systematic methodology for aggregating the findings from all meta-analyses on this topic. This systematic overview brought together the data from almost 100 systematic reviews/meta-analyses examining the prevalence of physical comorbidities in mental illness. Results showed that around 70% of the meta-research focused on cardiometabolic diseases; consistently reporting that mental illnesses were associated with 1.4- to 2-fold increased risk for obesity, diabetes and cardiovascular diseases compared to the general population. Although mostly studied in 'severe mental illness' (and particularly psychotic disorders), the prevalence of cardiometabolic diseases was similarly elevated across a broad range of other diagnoses, including substance use disorders, and 'common mental disorders' (such as depression and anxiety). These findings will be discussed in the context of not only how physical diseases contribute to premature mortality in mental illness, but also add to the personal, social, and economic burden of these conditions across the entire lifespan.
- 2** **8:00 AM-9:15 AM**
- TACKLING BEHAVIORAL RISK FACTORS EARLY: TO PREVENT PHYSICAL COMORBIDITIES IN MENTAL ILLNESS**
- Joseph Firth, PhD¹
- ¹University of Manchester, Manchester, England, UK
- To identify the key modifiable risk factors driving the health disparities, Part 2 of the Commission built from the findings of Part 1; producing a hierarchical evidence synthesis of the top-tier evidence for modifiable risk factors for physical diseases in people with mental illness. The available evidence from meta-analyses, systematic reviews and population-scale studies identified that smoking, excessive alcohol consumption, sleep disturbance, physical inactivity and dietary risks were elevated across a broad range of mental health diagnoses, and across various economic settings (i.e. both low, middle and high income countries). Additionally, the evidence highlighted how behavioral risk factors such as smoking, poor diet and inactivity are elevated from the first diagnosis of mental illness, even prior to psychotropic treatment. These findings will be discussed with regards to their implications for behavioral health initiatives. Specifically, it will be explained as to: (i) Why the pre-diagnostic prevalence of behavioral risk factors could represent a failure at policy (rather than health service) levels, (ii) How the disparities in health behaviors between people with mental illness and the general population may be due to both a willful abandonment of health promotion initiatives to reach these marginalized groups, combined with targeted marketing towards mental illness by big tobacco and fast-food giants, and (iii) That there is an urgent need for national health strategies and public policy to provide further consideration and legislation towards protecting those with (or at high risk of) mental illness - who have so far been 'left behind' from population-gains in public health. Finally, it will be discussed how recent advances in digital health technologies may provide new possibilities for wide-scale deliver of behavioral health initiatives for marginalized groups, such as those with mental illness.
- 3** **8:00 AM-9:15 AM**
- UNDERSTANDING AND ADDRESSING DIETARY RISKS IN MENTAL ILLNESS**
- Scott B. Teasdale, PhD; BNutrDiet; BAppSci (Nutr&Food)¹
- ¹UNSW Sydney, Vevey, Vaud, Switzerland
- Dietary risks as one of the key contributors to the development of obesity, cardiovascular disease and diabetes, and consistent evidence is showing less healthy dietary intakes are linked to poorer mental health and cognition. Strong evidence has shown that people living with mental illness have more excessive and less healthy dietary intakes compared to people without mental illness. The unhealthy dietary intake is apparent early in course of illness, with psychotropic medication appearing to exacerbate the problem, and appears to continue throughout the course of the illness and treatment. The reasons for the excessive and unhealthy dietary intakes are often multifactorial with patients and clinicians presented with additional unique challenges compared to people without mental illness. Despite these challenges, the Commission found robust evidence for dietary interventions as a core component of lifestyle interventions for people living with mental illness. Exploration of study components found that interventions were highly variable, particularly in terms of profession delivering the intervention, timing of intervention in the course of illness, and delivery method. This presentation will cover the following components: (i) describe the dietary intake and eating behaviours of people living with mental illness, (ii) highlight factors that driving the excessive and unhealthy dietary intake which are unique to people living with mental illness, and (iii) define the Commissions findings for effective dietary interventions in routine care for people living with mental illness.
- 4** **8:00 AM-9:15 AM**
- THE EFFICACY AND IMPLEMENTATION OF PHYSICAL ACTIVITY FOR PREVENTING PHYSICAL-MENTAL COMORBIDITY**
- Felipe Schuch, NA¹
- ¹Federal University of Santa Maria, Santa Maria, Rio Grande do Sul, Brazil
- Among the various modifiable factors identified by the Commission, physical inactivity is prevalent across a range of mental illnesses, and contributes to a broad range of physical. Indeed, substantial evidence demonstrates the protective role of physical activity and exercise against the emergence of both physical and mental illness. Similarly, the Commission presents the robust evidence that PA and exercise programs should be incorporated to the treatment of people with mental illness, both to protect their physical health, reduce psychiatric symptoms, improve their functional and, increasing their quality of life. Unfortunately however, translation of this body evidence to clinical practice is still slow, and exercise is under-recognized and under-recommended by mental health professionals. One of the reasons is the information gap, in which mental health professionals or does not have the proper knowledge to prescribe or recommend exercise to their patients. This scenario is even worse in middle-income countries. To close the information gap and facilitate the implementation of exercise programs, we outlined an international training program for mental health professionals regarding exercise prescription and recommendation with the most updated evidence available. The program consists of 10 topics: diagnostic features of the most prevalent mental illness (anxiety, mood, psychotic, eating, substance use disorders); main trans-diagnostic treatments; communication with people living with mental illness; physical health of people with mental illness; evidence on exercise as a preventative factor; evidence of exercise as a treatment; underlying biopsychosocial mechanisms of exercise effects; exercise prescription; motivation and behavioral change; and culture change. Along with describing the supporting evidence and design of such programs, this talk will present evidence-based strategies for implementing physical activity and exercise within the mental healthcare and service.

5

8:00 AM-9:15 AM

INTEGRATING HEALTH BEHAVIOR CHANGE THROUGH EVIDENCE-BASED LIFESTYLE INTERVENTIONS FOR PEOPLE WITH MENTAL ILLNESS

Simon Rosenbaum, BSc, PhD¹¹UNSW Sydney, SYDNEY, New South Wales, Australia

Despite the strong efficacy of evidence-based lifestyle interventions in people with mental illness (discussed in talks 3 and 4), people receiving treatment for mental illness rarely have access to evidence-based lifestyle programs, through either primary-care or secondary-care services. This is also at-odds with multiple national and international guidelines (such as the World Health Organization), which now recommend the use of lifestyle interventions for improving health outcomes in mental illness. Thus, Part 4 of the Commission focuses on the efficacy and implementation of multidisciplinary lifestyle interventions in mental healthcare. To do this, the Commission reviews key 'Lessons learned' from large scale trials and real-world implementation efforts of lifestyle interventions for psychiatric populations, and presents the Diabetes Prevention Program (DPP) as an example of a gold-standard lifestyle intervention that has broadly been successful in the general population. This presentation will explain how and why future lifestyle interventions in mental healthcare must adopt the core principles of the DPP; by partnering with appropriately trained physical health professionals, and by providing sufficient access to supervised exercise services. Within this, it must be remembered that "Prevention" sits at the centre of the DPP. Similarly, lifestyle interventions for people with mental illness should be available pre-emptively, in order to protect metabolic health from first illness presentation. Priorities for future initiatives and research include (i) translating DPP-based interventions for people with mental illness - across primary care, secondary services and LMIC settings, and (ii) using implementation science and cost-effectiveness evaluations to develop a business-case for integrating DPP-based interventions as standard in mental healthcare.

Symposium 39

8:00 AM-9:15 AM

ILLNESS PERCEPTIONS: CURRENCY OF LEVENTHAL'S COMMON-SENSE MODEL OF SELF-REGULATION IN BEHAVIORAL MEDICINE

Barbara L. Andersen, PhD¹, Howard Leventhal, PhD², Olayinka O. Shiyabola, PhD BPharm³, Deepika Rao, BPharm. M.S.⁴, Jo-Hsin Chen, BPharm⁵, Meng-Jung Wen, BS Pharm⁶, Lisa McAndrew, PhD⁷, Wilfred Pigeon, PhD⁸, Karen S. Quigley, Ph.D.⁹, David R. Litke, Ph.D.¹⁰, Shou-En Lu, PhD¹¹, L. Alison Phillips, PhD¹², Thomas R. Valentine, MA¹³, Stephen B. Lo, MA¹, Nicole A. Arrato, M.A.¹

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Several decades after its origin, Howard Leventhal's *Common-Sense Model of Self-Regulation* (CSM) remains a widely used theoretical framework for understanding how individuals respond to and manage physical symptoms and illness. The CSM proposes that when faced with a health threat, an individual generates cognitive and emotional representations of said threat which guide coping. Subsequently, the individual appraises the effects of his/her responses and, via a dynamic feedback loop, adjusts. Among the model's many strengths are its empirical base, broad applicability to health populations, and its utility to hypothesize, test, and discover processes underlying important illness-related outcomes.

Chaired by Dr. Barbara L. Andersen, the symposium presents ongoing behavioral medicine research capitalizing on the Model's strengths and then invites Dr. Leventhal's commentary. First, guided by the CSM, Dr. Lisa McAndrew details a study examining how the degree of concordance between patients' and providers' beliefs about persistent physical symptoms (i.e., medically unexplained symptoms) relates to satisfaction with healthcare and treatment adherence using a sample of Gulf War Veterans. Second, Dr. Olayinka Shiyabola will discuss the methodology of assessing illness perceptions in African Americans—particularly those with type II diabetes—and describes the development of a culturally-adapted measure of illness perceptions. Third, Thomas Valentine and Stephen Lo have studied individuals with advanced lung cancer and detail patients' illness perception schemas at diagnosis and their importance for understanding patients' later mental health and physical symptomatology. Last but not least, Discussant Dr. Howard Leventhal will consider these studies within the broader field of health behavior research and offer his perspective on how behavioral medicine professionals can utilize the CSM to guide future study and clinical practice.

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8:00 AM-9:15 AM

AN EXPLORATORY SEQUENTIAL MIXED METHODS STUDY TO ADAPT THE ILLNESS PERCEPTION QUESTIONNAIRE-REVISED FOR USE WITH AFRICAN AMERICANS

Olayinka O. Shiyabola, PhD BPharm¹, Deepika Rao, BPharm. M.S.², Jo-Hsin Chen, BSPharm³, Meng-Jung Wen, BS Pharm⁴

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Data suggest that the Illness Perception Questionnaire-Revised (IPQ-R) may have limitations of its reliability and validity when used with African Americans/Blacks (AAs), prompting the need for examination and development of a culturally-adapted (CA) version of the IPQ-R. Using sequential mixed methods, there were three objectives of the research: 1) discover and characterize beliefs about type 2 diabetes mellitus (T2DM) among AAs; 2) Using this information, write new CA IPQ-R items; and, 3) determine the psychometric properties of the CA IPQ-R.

Methods: Forty AAs with T2DM participated in six focus groups to explore their perceptions of diabetes and sociocultural factors which may be influential, using the Self-Regulatory Model as a framework. A content analysis revealed themes, and actual phrases of individuals were used to write new CA IPQ-R items. Next, cognitive interviews were done to explore CA item meaning/interpretations with a sample of 10 AAs. The CA IPQ-R was then administered to 123 AAs in a survey which included the Adherence to Refills and Medication-Diabetes scale, beliefs in medicines, and the IPQ-R. Correlational analyses were used to determine convergent validity of the CA IPQ-R, and multiple linear regression analyses were used for predictive validity studies. Internal consistency (Cronbach's alpha) is reported.

Results: Themes related to the existing IPQ-R and a new sociocultural domain showing AA perceptions were influenced by their discrimination experiences, AA community, and perceived role of race in relation to personal control. Findings were used in adapting the IPQ-R. Five questions from the CA IPQ-R were problematic and revised. Illness perceptions as assessed with the CA IPQ-R showed a moderate correlation with IPQ-R ($r = -0.68$, $p = 0.00$) and concern beliefs regarding medicines ($r = 0.60$). Individual items of the CA IPQ-R---consequences, personal control, emotional representation, causes and sociocultural influences---were significantly correlated with concern beliefs (range=0.28 to 0.60). Cronbach alphas ranged from 0.37-0.89. Illness perceptions and concern beliefs covaried with medication adherence ($B = -0.29$, $p = 0.003$; $B = -0.29$, $p = 0.013$, respectively).

Conclusions: These early data show the culturally adapted (CA) IPQ-R for use with AAs to converge with the IPQ-R and related measures. These data provide an empirical basis for pursuing further psychometric analyses with larger AA samples, including those with and without type 2 diabetes mellitus.

2

8:00 AM-9:15 AM

THE IMPORTANCE OF CONCORDANT PERCEPTIONS OF PERSISTENT PHYSICAL SYMPTOMS: A STUDY OF GULF WAR VETERANS AND THEIR VA HEALTH CARE PROVIDERS

Lisa McAndrew, PhD¹, Wilfred Pigeon, PhD², Karen S. Quigley, Ph.D.³, David R. Litke, Ph.D.⁴, Drew Helmer, M.D.⁵, Shou-En Lu, PhD⁶, Alison Phillips, PhD⁷

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More than half of patients with persistent physical symptoms (PPS; also termed medically unexplained symptoms, e.g., chronic pain) are dissatisfied with their care and oftentimes, relationships with their medical provider. Consistent with Leventhal's Common-Sense Model of Self-Regulation, such dissatisfaction may be due to discordant beliefs between patients and providers about the cause, consequences, and nature of PPS and the appropriate treatment approach. What is not known is if the development of greater concordance about PSS between patients and providers during treatment would be associated with higher satisfaction and adherence.

Method: Using a two-treatment group randomized trial (N=91), Veterans with Gulf War Illness (i.e., PSS) to receive 12-weeks of health education vs. 12-weeks of problem-solving treatment. Using a validated measure, patients and their providers were asked if they perceived concordance about PSS at 4-weeks and 12-weeks. Also assessed at 12 weeks was patient's satisfaction with treatment, adherence to treatment, and perception of their relationship with their provider.

Results: Patients were similarly satisfied and adherent to both treatments and the outcomes described did not differ between groups. Patients' perception of concordance with their provider about PSS at 4-weeks and 12-weeks was related to satisfaction ($r = .25$, $p < .05$ & $r = .64$, $p < .01$), self-report adherence ($r = .08$, ns & $r = .22$, $p < .05$), and perception of their relationship with their provider ($r = .27$, $p < .01$ & $r = .53$, $p < .01$). Providers' perceptions of concordance about PSS with their patient was unrelated to patients' satisfaction, treatment adherence, or perceptions of their relationship with their provider. However, patients' perception of concordance about PPS was a stronger predictor of treatment satisfaction and adherence than perceptions of their relationship with their provider.

Conclusion: The development of concordant beliefs between patients and providers about PSS can improve satisfaction and adherence. Also, achievement of concordance may be an important goal of treatment, providing support for Leventhal's Common-Sense Model of Self-Regulation as a guide treatment development.

3

8:00 AM-9:15 AM

THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS: ILLNESS PERCEPTION SCHEMAS PREDICTING HEALTH OUTCOMES IN PATIENTS WITH LUNG CANCER

Thomas R. Valentine, MA¹, Stephen B. Lo, MA², Nicole A. Arrato, M.A.²¹The Ohio State University, Birmingham, AL; ²Ohio State University, Columbus, OH

According to Leventhal's Self-regulatory Model (SRM), upon facing an illness stimulus, an individual forms a mental representation of the stimulus (illness perception; IP) which impacts illness outcomes. Studies typically analyze IP data at the item/component level. However, the SRM suggests that IPs do not exist in isolation; rather, they comprise schemas. This study compared two perspectives on patients' IP data—individual components (i.e., item by item) vs. empirically determined schemas—and then tested their differential contribution to predicting mental and physical health outcomes.

Method: Stage-IV Non-Small Cell Lung Cancer (NSCLC; N=164) patients completed the Brief Illness Perception Questionnaire which includes IP items/components of illness consequences, timeline, personal control, treatment control, identity (symptoms), coherence (understanding), concern, and emotional response at diagnosis. Also completed at diagnosis and four months later were measures of eight outcomes: anxiety (GAD-7) and depressive (PHQ-9) symptoms, physical symptoms (dyspnea, cough, pain, and overall symptoms), and an overall health rating (EQ5D5L and EQVAS). First, IPs at diagnosis were used in a latent profile analysis (LPA) to determine patients' shared IP schemas. Next, linear regression analyses examined associations of IP components and schemas with baseline and follow-up outcomes. For each, analyses compared component and schema model fit (R^2 and BIC).

Results: LPA revealed three schemas: "positive" (n=28), "negative" (n=52), and "mixed" (n=84). Groups differed on all IP components except coherence. At baseline and 4-months, NSCLC patients with a negative schema exhibited the most severe mental health and physical symptoms and the poorest health status ($p < .05$). Although component models (adjusted $R^2 = .11-.36$) explained significantly more variance in outcomes (n=5; 63%) at baseline compared to models using schema groups (adjusted $R^2 = .06-.23$), schema models had either equivalent (n=2; 25%) or better fit (n=6; 75%). With 4-month data, schema models explained equivalent amounts of variance (n=8; 100%) and had better fit (n=8; 100%).

Conclusion: Patients with advanced NSCLC exhibit multiple patterns of IP at diagnosis that are not identifiable via traditional IP component analyses. Importantly, a negative IP schema at diagnosis is prognostic for worse mental and physical health, and is a potential modifiable target for interventions to improve lung cancer outcomes.

Symposium 40

8:00 AM-9:15 AM

SOCIAL LISTENING: HARNESSING BEHAVIORAL HEALTH INSIGHTS FROM REAL-TIME ORGANIC CONVERSATIONS

Rachel N. Ingersoll, MPH¹, Sam Liu, Ph.D.², Anuja Majmundar, M.B.A., M.A.³, Christine Lee, PharmD PhD⁴, Miriam H. Eisenberg Colman, Ph.D.¹, Ronne Ostby, MA¹¹Fors Marsh Group, Arlington, VA; ²University of Victoria, Victoria, BC, Canada; ³University of Southern California, Orange, CA; ⁴FDA, Fulton, MD

Social listening, tracking of what people are discussing around a specific topic on social media, can provide real time insight into the attitudes, beliefs, values, and conversations of the general public. Social listening data can inform formative research, public health interventions, and messaging campaigns, and track their effectiveness. Traditionally used by marketers, this applied research approach to social listening allows researchers to gain insights from real time data while maintaining appropriate academic rigor.

This symposium will present different perspectives and experiences using social listening to understand how people are engaging with content in real time, what this data can inform, and how this can be used to accelerate science and research. Presentations will cover a variety of social listening strategies and applications and discuss the benefits, challenges, and lessons learned from incorporating social listening into their research.

Rachel Ingersoll will present a brief overview of Digimind, a social media analytics platform, and how it can be used to assess the frequency and context around social media conversations on specific health topics. She will discuss how researchers can use social listening platforms like Digimind to follow, engage, analyze, and report trends across different populations and social media platforms and how they can be used to inform interventions and public health campaigns.

Sam Liu will share research on finding innovative methods of using social media data (e.g. Instagram) to monitor and predict health-related outcomes. The findings suggest that Instagram data may be used to estimate a person's levels of physical activity and their exercise identity. He will discuss how social listening can be used to provide real-time monitoring of psychological and behavioural outcomes that inform health behaviors.

Anuja Majmundar will present research that explores whether posting about the health-effects of e-cigarettes on Twitter is associated with a subsequent change in stance toward e-cigarettes, and will provide data showing the utility of computational epidemiology to understand individual-level trajectories in health attitudes. She will discuss how social listening was used to describe user experience with emerging tobacco products and to improve population health surveillance.

Dr. Christine Lee will present research that mined unstructured data collected by the FDA from advisory committees, as well as the social media platform, Twitter, and transformed it into meaningful data. She will discuss how social listening was used to gain insights to help advance communication strategies for minorities with diabetes.

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8:00 AM-9:15 AM

USING DIGIMIND TO ENGAGE IN SOCIAL LISTENING OF PUBLIC HEALTH TOPICS

Rachel N. Ingersoll, MPH¹¹Fors Marsh Group, Arlington, VA

Social listening allows researchers to identify trends in publicly available social media discussions and gain real time understanding into people's attitudes, beliefs, and priorities on a wide variety of topics. Using these insights, researchers can develop or refine public health messaging and tactics to align with consumers' mindsets. Digimind, a social listening tool, allows researchers to aggregate public data from social media platforms over time and analyze the who, what, when, where, and how.

Of the many benefits of social listening tools like Digimind, the three that have been most useful in our research have been aggregating data across platforms, obtaining data in real time, and identifying signals. Digimind's coverage of 21 digital media platforms (e.g. Twitter) and ability to aggregate data across platforms facilitated rapid data collection and analysis. Digimind's ability to provide real-time data has allowed us to track in-the-moment discussion, from snapshots in time to trends over time. Lastly, using "noise filtering" capabilities, filtering out unrelated posts containing similar keywords, allows us to more easily assess signals. The ability to refine filtering as Digimind compiles data has minimized the likelihood that unrelated discussions could skew results.

Case studies are used to show how this tool can facilitate research. Digimind shows researchers not only if a topic is being discussed but how and in what context. For example, while examining parents of young children's views on anchoring furniture, we found that what often drives these social media discussions are stories about deaths or injuries related to furniture and TV tip-overs. Digimind also helps organize results to generate insights using big datasets. In a study on people's views on telehealth resources, we found that people responded favorably to using telehealth resources as an alternative to an in-person visit to the doctor's office.

We will also review the challenges faced and the lessons learned using Digimind for social listening, including allocating sufficient time for topic monitoring, limited scope to certain channels, and generalizability limitations.

Incorporating social listening into research can help researchers accelerate their science by taking advantage of the wealth of publicly available information that can provide valuable insights. Findings can be timely and triangulated against other studies. Implications for future research include audience insights on specific interventions, enhance digital strategies to better engage with the target audience, and process evaluations.

2

8:00 AM-9:15 AM

EVALUATING THE RELATIONSHIPS BETWEEN SOCIAL MEDIA POSTS AND EXERCISE IDENTITY

Sam Liu, Ph.D.¹¹University of Victoria, Victoria, BC, Canada

Background: The growing body of social media data is becoming a central part of big data research as these data can be modelled alongside other datasets (e.g. physical activity data) and used to predict outcomes from these datasets. Previous research has shown that social media data could be used to provide real-time monitoring of psychological and behavioural outcomes that inform health behaviours. Currently, it is unclear whether a person's Instagram data can be used to predict a person to physical activity level and exercise identity.

Objective: This study seeks to examine the feasibility of using a person's physical activity related to Instagram posts as a method to monitor physical activity levels and exercise identity.

Methods: Eligible participants were asked to complete questionnaires that assessed their physical activity level, exercise identity and perceived social comparison. Participants' Instagram data (12-month) were downloaded using Instagram's Application Program Interface. Instagram pictures were coded by two research assistants using a set of standardized criteria to determine whether the posts were related to physical activity. The ratio between the physical activity-related posts and the total number of posts were calculated for each participant. Linear regression models were used to evaluate the relationship between a person's physical activity related to Instagram posts as a method to monitor physical activity levels and exercise identity

Results: 40 participants (age \pm SD: 19 \pm 2.1; female: n=25) completed the study. Participants made on average 29.6 posts (range 5-190) over one year before completing the questionnaire. We found that increase in the ratio of the physical activity related Instagram posts were significantly associated with a person's exercise identity (b=.35; 95%CI=.01, .20; p=0.02) and physical activity levels (b=.20; 95%CI=.01, .22; p=0.03) after controlling for age, sex and sense of social comparison.

Conclusion: Using social media data to monitor physical activity level can be a valuable tool for eHealth researchers to help tailor and target physical activity interventions. Future research needs to examine whether additional Instagram data variables (e.g. number of followers, likes, comments) can also be used to predict physical activity-related outcomes.

3

8:00 AM-9:15 AM

IS POSTING ABOUT HEALTH EFFECTS OF E-CIGARETTES ASSOCIATED WITH ATTITUDES TOWARDS E-CIGARETTES?

Anuja Majmudar, M.B.A., M.A.¹, Jon-Patrick Allem, Ph.D.², Tess Cruz, Ph.D.², Jennifer B. Unger, Ph.D.³, Mary Ann Pentz, Ph.D.⁴¹University of Southern California, Orange, CA; ²University of Southern California, Department of Preventive Medicine; ³University of Southern California, Los Angeles, CA; ⁴University of Southern California, Department of Preventive Medicine, Los Angeles, CA

As e-cigarette use (vaping) has grown in popularity in the U.S, misconceptions about the health effects of vaping have also increased. Recent research suggests that vaping may be associated with cancer and respiratory diseases, while other research also demonstrates that vaping may help current smokers quit or reduce cigarette consumption. E-cigarette devices have also evolved to facilitate the use of nicotine and cannabis e-juices, posing an additional challenge in assessing and communicating scientific findings to the public. Social media users contextualize discussions about vaping in light of information from news articles, personal experiences, marketing messages, and peer discussions. To gain a holistic understanding of public experience with tobacco content on social media, it is crucial to examine whether specific characteristics of such messages are associated with subsequent tobacco-related attitudes. Social media data offer an opportunity to infer attitudes towards e-cigarettes (pro-, anti-, neutral) by the public. This study will investigate whether topics associated with perceived health effects of vaping (e.g., pain, cancer, heart disease) are associated with attitudes toward e-cigarettes over time. Posts to Twitter (January 2019–December 2019) will be analyzed using machine learning methods to infer attitude toward e-cigarettes. Based on estimates from ongoing data collection, the expected sample size is 1500 Twitter accounts. Multinomial multi-level logistic regression analyses will then evaluate the association between posting about health effects of vaping and subsequent attitudes towards vaping. Each tweet (Level 1) will be nested under Twitter user accounts (Level 2). Covariates will include mentions of cannabis (yes/no), number of health-related tweets posted per account, and the number of e-cigarette-related tweets posted per account. Findings will offer insights for scalable, personalized social media health interventions.

4

8:00 AM-9:15 AM

UTILIZING SOCIAL MEDIA AND FDA DATA TO ADVANCE COMMUNICATION STRATEGIES FOR MINORITIES WITH DIABETES.

Christine Lee, PharmD PhD¹, chardae Arajo, PharmD², Christine Merenda, RN²¹FDA, Fulton, MD; ²FDA

The FDA has a wealth of data, and a significant amount is unstructured data such as advisory committee (AC) meeting transcripts and public docket comments. Additionally, there is a plethora of unstructured data created by minority group users of social media. Analysis of these types of data is critical to FDA's regulatory mission. This pilot study applied qualitative research methods to unstructured FDA data as well as social media data to understand the audience and gaps in communication to minority groups about diabetes.

This novel research project mined unstructured data collected by the FDA from advisory committees, focus groups, and public dockets, as well as the social media platform, Twitter, and transforming it into meaningful data. Unstructured narrative data was collected from the transcripts of two FDA Advisory Committee Meetings and from approximately six months of Twitter tweets. They were parsed into structured data sets using Python scripts and analyzed using techniques including Valence Aware Dictionary and Sentiment Reasoner (VADER) to compute polarity scores, the Porter Stemmer algorithm to conduct linguistic stemming, and Latent Dirichlet Allocation for topic modeling. Interactive data visualizations were created to track the polarity and importance of sentences across the two transcripts.

The overall sentiment of the advisory committee meetings was positive; the polarity varied by type of speaker (e.g., physician, patient advocate). Combining those topic models with race/ethnicity data and Twitter data, revealed that minority groups communicate about diabetes topics in different ways.

Symposium 41

8:00 AM-9:15 AM

INNOVATIVE METHODS FOR STUDYING THE DYNAMICS OF EMOTIONS AND WELL-BEING

Zita Oravecz, PhD¹, Emilio Ferrer, N/A², Philippe Rast, PhD³, Siwei Liu, PhD⁴, Michael Pavel, Ph.D.⁵¹Pennsylvania State University, State College, PA; ²University of California, Davis, Davis, CA; ³University of California Davis, Davis, CA; ⁴University of California at Davis, Davis, CA; ⁵Northeastern University, Boston, MA

Behavioral sciences have seen a surge in studies where self-reports on psychological states are collected repeatedly over time from many people (i.e., ecological momentary assessment; EMA), yielding intensive longitudinal data (ILD). These data can provide nuanced insights into the within-person processes of emotions and well-being, and individual differences therein. In turn, linking these to health outcomes can inform behavioral interventions. However, analyzing ILD involves methodological challenges. This symposium presents and illustrates the applicability of a series of innovative methodological approaches for examining affective health with ILD from EMA studies. Dr Emilio Ferrer will present on how the dynamic signature underlying the interactions between dyadic units, such as patient-caregiver and parent-child, can make predictions of the behavior of the dyadic system. Dr. Philippe Rast will discuss how individual differences in measurement reliability across time and conditions can be accounted for, and the practical consequences of such individual differences on well-being. Dr Siwei Liu will compare multilevel approaches in the context of relating negative health outcomes and emotional reactivity. Dr Zita Oravecz will show how continuous-time modeling for irregularly spaced, imbalanced longitudinal data can be used for capturing within-person affect dynamics and their links to emotional health.

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1

8:00 AM-9:15 AM

STUDYING LINKS BETWEEN DAILY LIFE AFFECT DYNAMICS AND HEALTH OUTCOMES VIA CONTINUOUS TIME MODELING

Zita Oravecz, PhD¹¹Pennsylvania State University, State College, PA

Affective experiences in daily life have been linked to health outcomes in ecological momentary assessment (EMA) studies. This talk will focus on core affect, which is an integral blend of momentary valence and arousal levels, and can be measured in EMA settings by prompting participants to provide self-reports on how pleasant and active they feel at the moment. Capturing relevant aspects of core affect dynamics is methodologically challenging, as in EMA studies participants often follow different (semi-random) data collection schedules, resulting in irregularly spaced, imbalanced longitudinal data. I will introduce a multilevel continuous-time model for capturing within-person affect dynamics, as well as interindividual differences in these. For example, I will show how we can quantify affect regulation by modeling the individual's tendency to return to their baseline levels. The proposed approach makes it possible to link the sources of individual differences in affect dynamics to time-varying and time-invariant predictors in a one-stage analysis. I will illustrate the approach with data from a four-week long EMA study in which participants provided self-reports on their affective states six times daily at randomly prompted time points. Individual differences in affect dynamics, such as in within-person variability, showed meaningful links to health outcomes.

2

8:00 AM-9:15 AM

MODELS FOR STUDYING AFFECT DYNAMICS OF MACRO- AND MICRO-PROCESSES IN DYADIC INTERACTIONS

Emilio Ferrer, N/A¹¹University of California, Davis, Davis, CA

Two important goals when examining data from dyadic interactions are: (a) the identification of patterns representative of the dynamics between the two dyadic units (e.g., patient-caregiver, parent-child), and (b) the use of such patterns to make predictions about the (future) state of the dyadic system. In this talk, I present models to identify dynamics from intensive data reflecting dyadic interactions. I describe theoretical models that can capture such interactions and offer approaches to apply those models to empirical data. The approaches include statistical and mathematical models as well as exploratory techniques. Some of these models focus on the entire time span of the data, attempting to capture general dynamics between the two individuals in the dyad. These approaches are typically confirmatory and consist of specifying a mathematical expression that pertains to the sample and the entire data set. Other models focus on specific events that take place within concrete data windows, sometimes disregarding the remaining data as not representative of the pertinent process. In this talk, I describe both approaches and then combine them with the goals of obtaining an accurate dynamic signature underlying the interactions across the dyads, as well as making predictions of the behavior of the dyadic system.

3

8:00 AM-9:15 AM

PREDICTING INDIVIDUAL CHANGES IN MEASUREMENT RELIABILITY IN DAILY AFFECT

Philippe Rast, PhD¹¹University of California Davis, Davis, CA

Intensive longitudinal data (ILD) are typically analyzed with time-series models that capture the response over time, conditioned on previous responses and external variables. When multiple time series, or participants, are involved, variations of mixed effects models are often applied. Most of these models focus on the mean structure, that is, the most likely response over time. Hence, residuals reflect the unexplained portion and are typically assumed to originate from a common error variance. In this work we relax the assumption of a common error variance by applying a mixed effects location scale model. Doing so allows one to model the error variance as a function of individual differences, dynamic effects and external variables. This also implies that the residual variance itself still contains relevant information. As illustrated with affect data from the Daily Stress Interview Study (DAISI), these models can be used to relate location and scale effects and predict within-person variability. Moreover, as a result of allowing heterogeneous error variances, we show how measurement reliability can change as a function of time and/or conditions. In other words, reliability is different for different individuals, changes throughout the study and we can identify occasions when measurements are more reliable compared to other times or conditions. Implications for applied researcher are discussed.

4

8:00 AM-9:15 AM

USING REACTIVITY AS A PREDICTOR OF HEALTH AND WELL-BEING: A COMPARISON OF TWO APPROACHES

Siwei Liu, PhD¹¹University of California at Davis, Davis, CA

Intensive longitudinal data, such as daily diary data and experience sampling measurements, enable researchers to examine how people react to various contextual stimuli in their everyday life. Research in this vein has demonstrated important implications of such reactivity on health and well-being. For example, emotional reactivity to stress (e.g., the strength of association between daily emotion and stress of an individual) has been showed to predict negative health outcomes such as elevated inflammation and higher mortality risk. Similarly, an individual's emotional inertia (e.g., the strength of association between negative affect measured on two consecutive days) has been shown to predict mental health indicators such as depression. In this talk, I discuss and compare two different approaches that allow researchers to use reactivity as a predictor of health and well-being. In the multilevel modeling (MLM) approach, reactivity is treated as an observed variable, whereas in the multilevel structural equation modeling (MLSEM) approach, reactivity is modeled as a latent variable. I will present results from Monte Carlo simulations to show that MLM generally leads to biased regression estimates but often yield higher statistical power than MLSEM. As such, MLM may be more appropriate when researchers are interested in evaluating whether a relation exists, whereas MLSEM is more appropriate when the research question concerns about assessing the magnitude of a relation. The differences between the two approaches are illustrated with an empirical example where reactivity to daily stress in food consumption is used to predict indicators of weight status (BMI; waist-to-hip ratio).

Symposium 42

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

TRACKING FOR SUCCESS: PREDICTORS AND MECHANISMS OF SELF-MONITORING OF DIET AND PHYSICAL ACTIVITY IN BEHAVIORAL INTERVENTIONS

Kathryn M. Ross, Ph.D., M.P.H.¹, Dori Steinberg, PhD, RD², Rebecca Krukowski, PhD³, Gary Bennett, PhD²¹University of Florida, Gainesville, FL; ²Duke University, Durham, NC;³University of Tennessee Health Science Center, College of Medicine, Memphis, TN

Regular self-monitoring of dietary intake and physical activity are key components of gold-standard behavioral programs for weight loss and chronic disease management. Self-regulation theory posits that self-monitoring promotes behavior change by allowing individuals to observe progress toward goals, providing reinforcement when goals are met and cueing additional changes when they are not. In line with this theory, the empirical literature has demonstrated a consistent association between adherence to self-monitoring and success at changing dietary intake and activity behaviors. Despite strong evidence supporting the role of self-monitoring in behavioral interventions, many important research questions remain, such as: 1) what are potential mechanisms and moderators of the association between self-monitoring and behavior change?; 2) what baseline and early-treatment characteristics and behaviors can predict adherence to self-monitoring?; and 3) how can interventions promote greater adherence to self-monitoring? As part of this symposium, we will present three recent studies that address these important questions. The first presentation will examine the role of self-monitoring in helping individuals stay on track with dietary intake goals despite experiencing temptation to eat foods not consistent with those goals, and further will investigate whether these associations are different for individuals who achieve clinically-significant weight losses during a behavioral intervention, compared to those who do not. The second presentation will identify patterns of adherence to self-monitoring observed during a digital behavioral intervention designed to improve diet quality, and further examine baseline and early-treatment predictors of adherence to self-monitoring. The third presentation will examine how the length and content of tailored feedback messages regarding diet and physical activity self-monitoring can affect intention to continue self-monitoring. Taken together, these presentations address three ways of understanding the predictors and mechanisms of self-monitoring; with these results, it may be possible to design interventions that improve self-monitoring adherence and promote successful behavior change. The discussant will end the symposium by synthesizing results across the three presentations, integrating key findings with the broader behavioral self-monitoring literature and exploring important implications for the development of future studies and interventions.

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LEAD US FROM TEMPTATION: THE ROLE OF SELF-MONITORING IN PROMOTING DIETARY ADHERENCE DURING AND AFTER A WEIGHT LOSS PROGRAM

Kathryn M. Ross, Ph.D., M.P.H.¹¹University of Florida, Gainesville, FL

Within the weight management literature, greater adherence to self-monitoring of dietary intake has been shown to improve adherence to dietary intake goals, ultimately promoting greater weight loss. Conversely, experiences of temptation to eat foods that are not consistent with dietary goals has been shown to predict lower dietary adherence. Theoretically, self-monitoring should help individuals who are experiencing temptation to stay on track with dietary intake goals; however, no empirical studies have examined this theoretical link. Moreover, little is known regarding other moderators of the effect between self-monitoring and dietary adherence. The current study addressed these gaps by investigating proximal (week-to-week) associations between self-monitoring, temptation, and dietary adherence in 74 adults (age = 50.7 years, BMI = 31.2 kg/m², 69% Female, 87% White) who completed a 12-week Internet-based weight loss program followed by a 9-month maintenance period. Each week, via a study website, participants reported days of self-monitoring and rated perceived temptation and dietary adherence on 7-point Likert-style items. Linear mixed models were used to assess associations between frequency of self-monitoring, temptation (centered within individual), and dietary adherence within the same week. As an exploratory aim, moderation of these effects by success at achieving clinically-significant weight loss ($\geq 5\%$ from baseline at the end of 12 months) was examined. Results demonstrated that, during a given week, each additional day of self-monitoring was associated with a 0.2 point increase in ratings of dietary adherence, $p < .0001$; in contrast, a 1 point higher than average rating of temptation was associated with 0.5 point lower rating of dietary adherence, $p < .0001$. There were no differences in these associations between individuals who were or were not successful at weight loss, $p > .05$. There was also not a significant interaction between self-monitoring and temptation across all participants, $p = .052$; however, there was a significant three-way interaction with these constructs, $p = .023$, such that greater self-monitoring attenuated the magnitude of the association between temptation and dietary adherence only in individuals who were successful at weight loss. Taken together, results confirm proximal associations between self-monitoring, temptation and dietary adherence and demonstrated that, in individuals who are successful at weight loss, self-monitoring may help individuals stay on track with dietary changes despite the experience of temptation to consume foods not consistent with dietary intake goals. While existing literature has demonstrated that individuals who are not successful at weight loss engage in less self-monitoring, future studies should investigate whether self-monitoring may also be less effective for these individuals.

2

8:00 AM-9:15 AM

TRACKING EARLY MATTERS: PREDICTORS OF DIETARY SELF-MONITORING WITHIN A DIGITAL BEHAVIORAL INTERVENTION TRIAL AIMED TO IMPROVE DIET QUALITY

Dori Steinberg, PhD, RD¹, Jacob Christy, MS¹, Sandy Askew, MPH², Gary Bennett, PhD¹

¹Duke University, Durham, NC; ²Duke University, Ocoee, FL

Background: Consistent engagement with self-monitoring is a key predictor of successful behavior change. Yet, consistent engagement can be particularly challenging for individuals tracking dietary intake. Understanding predictors of dietary self-monitoring engagement is necessary to determine what strategies work best for promoting consistency. The objective of the current analysis was to understand patterns and predictors of dietary self-monitoring engagement among adults enrolled in the DASH Cloud randomized-controlled trial.

Methods: DASH Cloud was a 3-month digital health intervention aimed at improving adherence to the DASH diet among women with hypertension. Participants (n=59) were randomized to the DASH Cloud (n=30), or attention control (n=29) arms. Both groups received publicly available booklets about the DASH diet and were asked to self-monitor their diet using a commercially available diet tracking app, Nutritionix. Only the intervention arm received personalized feedback about their adherence to the DASH diet and skills training videos. Self-monitoring engagement was operationalized as the proportion of valid days tracked in the app. Descriptive statistics analyzed patterns of tracking over time and linear regression models evaluated sociodemographic and early tracking predictors of overall dietary self-monitoring engagement.

Results: Women had a mean (SD) age of 49.9 (11.9) years and were primarily Non-Hispanic White (69%), and college-educated (83%). Overall, the median (IQR) proportion of self-monitoring engagement for 12 weeks was 76% (IQR: 27-95). Those who tracked every day within the first 2 weeks were more likely to have higher overall engagement [94% (IQR: 69-99) vs. 32% (IQR: 13-76); $p < .001$] compared to those who tracked less often. Similar trends were seen for those who tracked daily in the first month. Engagement was significantly higher among individuals who were married [85% (IQR: 44-98) vs. 44% (IQR: 25-92); $p=.03$], had a lower BMI, college educated [83% (IQR: 39-95) vs. 31% (IQR: 20-60); $p=.04$], insured [76% (IQR: 35-95) vs. 11% (IQR: 6-17); $p = .04$], were comfortable with using apps [92% (IQR: 85-96) vs. 49% (IQR: 24-94); $p = .01$] and more likely to not use an app to track medication adherence [82% (IQR:35-95) vs. 24% (IQR:15-44); $p = .03$].

Conclusion: Engagement with dietary self-monitoring was moderate-to-high among adults enrolled in the DASH Cloud trial. Many sociodemographic variables predicted higher engagement, but the strongest predictor was early engagement; those who tracked every day in the first two weeks had higher engagement overall. Interventions aimed at promoting self-monitoring should consider how to best promote high rates of tracking at the start.

3

8:00 AM-9:15 AM

NOT ALL FEEDBACK IS CREATED EQUAL: OPTIMIZING DIETARY AND EXERCISE SELF-MONITORING FEEDBACK

Rebecca Krukowski, PhD¹, Xuyang Tang, PhD², Delia West, PhD³, Melissa L. Stansbury, M.S., EP-C⁴, Qian Li, BS⁵, Saunak Sen, PhD⁶

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Background: Tailored dietary and physical activity self-monitoring feedback is a core element of behavioral weight loss interventions and associated with clinically significant weight loss. Providing this feedback is time-consuming for counselors, however, with about 30 minutes needed per message. To our knowledge, no studies have evaluated participants' perspectives on the composition of feedback messages and how the composition of feedback may impact intention and motivation to self-monitor. The purpose of this study was to assess how participants perceived self-monitoring feedback emails depending on the number of positive comments or areas for change suggested by the counselor and the best combination of these components.

Methods: The dietary and physical activity feedback in the e-mails followed a factorial design with 2 factors (i.e., positive comments and areas for change), each with 3 levels (i.e., 1 comment, 4 comments, and 8 comments). Two hundred and fifty participants with overweight and obesity (age= 52.9 years, 52% women, 58% identified as White, 42% with a college degree or more) were recruited from Qualtrics research panel and read 9 emails presented in random order. For each of the 9 emails, participants answered 8 questions about their motivation and intention to self-monitor as well as their perception of the counselor and the emails. Ordered logit regressions were performed to determine the main effects and interactions. Predictive margins of e-mails were computed to indicate the changes in outcomes given different combinations.

Results: Main effects showed that the emails with more positive comments or areas for change were better received by participants, with small incremental benefits for 8 versus 4 positive comments/areas for change. Interactions indicated that the best combination for 4 out of 8 the concepts assessed (i.e., motivation to self-monitor, counselor's concern for their welfare, perceiving the counselor likes them, perceiving the email is tailored) was the email with 8 positive comments and 4 areas for change. Emails with 4 positive comments and 4 areas for change resulted in the highest average probability of reporting being very likely to continue self-monitoring.

Conclusions: Results demonstrated potential for optimizing self-monitoring feedback for efficacy and cost-effectiveness. Future studies should explore how the composition of feedback emails translates to actual self-monitoring among individuals engaged in a weight control program.

Symposium 43

8:00 AM-9:15 AM

PREVENTING TOMORROW'S DISPARITIES TODAY: ADDRESSING EARLY LIFE RISKS TO PROMOTE HEALTH ACROSS THE LIFESPAN

Leigh Ann Simmons, PhD, MFT¹, Jewel Scott, MSN, FNP-C², Benjamin Laufer, PhD³, Rebecca Schmidt, PhD⁴¹University of California, Davis, Davis, CA; ²Duke University School of Nursing, Durham, NC; ³University of California, Davis, USA, CA; ⁴University of California Davis, Davis, CA

Although the United States spends nearly 50% more on health care than other developed nations in the world, the US ranking in health outcomes has declined in past decades, in large part due to disparities in rates of common chronic disorders (e.g., obesity, heart disease, neurodevelopmental disorders) and associated morbidity and mortality. These disparities are shaped by the complex interrelationships among factors across the developmental continuum, ranging from biological (e.g., genes, cell metabolism) to behavioral (e.g., nutrition, physical activity) to social and environmental influences (e.g., neighborhood stress, pollution). Importantly, data are increasingly showing that disparities in health outcomes originate early in life, with intrauterine exposures, early childhood events, and social environments during adolescence all playing key roles in adult health trajectories. This purpose of this symposium is to present findings from one non-human primate investigation and two human studies that characterize how early life exposures increase risk for poor health across the lifespan, specifically autism spectrum disorders and hypertension. The first study will present epigenetic data from a macaque model that utilizes whole genome sequencing of cell free fetal DNA methylation in maternal blood to assess the impact of maternal obesity on offspring brain and behavior. The second study will report on two cohort studies of autism spectrum disorder (ASD) risk that investigated relationships between maternal environmental contaminant exposures and maternal nutritional intake on child ASD diagnosis. The third study will present findings from a nationally representative, longitudinal study of Black adolescents that examined the association of social stress in the form of discrimination and parental relationships on hypertension in young adulthood. Findings will be synthesized to better understand the intergenerational transmission of health disparities, including: (1) discussion of the complex interplay of early life influences on later life health using neurodevelopmental disorders/autism spectrum disorders and hypertension as exemplar disorders; (2) consideration of how to holistically address multiple influences simultaneously to mitigate disparities in vulnerable populations; and (3) presentation of a model of health equity that capitalizes on advances in technology with the goal of eliminating disparities in the next generation.

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8:00 AM-9:15 AM

PERCEIVED DISCRIMINATION, PARENTAL RELATIONSHIPS, AND HYPERTENSION IN YOUNG BLACK FEMALES

Jewel Scott, MSN, FNP-C¹, Susan Silva, PhD², Leigh Ann Simmons, PhD, MFT³¹Duke University School of Nursing, Durham, NC; ²Duke University School of Nursing; ³University of California, Davis, Davis, CA

Background: Hypertension (HTN), a leading contributor to cardiovascular morbidity and mortality, disproportionately affects Black females. The chronic stress hypothesis posits that the toll of various stressors, beginning in early life, may contribute to the earlier development of HTN in Black women. Perceived discrimination and associated stress are linked with various health outcomes, although a strong parental relationship may buffer the physiologic response. We assessed the hypothesis that experiencing discrimination contributes to elevated blood pressure in Black women, and parental relationships may moderate this relationship.

Methods: Participants are 608 Black females from the National Longitudinal Study of Adolescent to Adult Health, a nationally representative study of youth in the US initially enrolled between 7th-12th grades and followed for 2.5 decades. Exposure to discrimination was measured in adolescence with two questions about prejudiced peers and unfair teachers, and in young adulthood with one question about experiences of being treated with less courtesy and respect than others. We examined the following five characteristics of a supportive maternal relationship in youth as potential stress buffers: warmth, caring, closeness, communication, and quality of the overall relationship. Participants were classified as having HTN (>130/90) or not in early adulthood (24-32 years). Bivariate and multivariable logistic regression were used to evaluate the association of HTN and discriminatory experiences, and to test for moderation by maternal relationship.

Results: Mean age of participants was 28.9 years; 34% met criteria for HTN. High perceived discrimination in young adulthood was associated with greater likelihood of having HTN, (OR 1.90, p=0.001), while exposure during adolescence was not. Only maternal communication moderated the relationship with HTN such that women who reported high communication with their mothers in adolescence and experienced discrimination were more likely to have HTN in young adulthood.

Conclusions: Rates of HTN in this group of young Black women were high and demonstrate need for innovative approaches to eliminating this disparity. Interestingly, high maternal-adolescent communication was associated with increased odds of HTN in the face of discrimination, suggesting there is a need to better understand how families talk about and counter the stress of discrimination to develop appropriate interventions.

2

8:00 AM-9:15 AM

A PRENATAL EPIGENOMIC INVESTIGATION OF THE IMPACT OF MATERNAL OBESITY ON INFANT NEURODEVELOPMENT

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Background: Exposures to negative prenatal environmental conditions like maternal obesity increase the risk for neurodevelopmental disorders (NDDs), which include autism spectrum disorders (ASDs). These exposures represent a public health crisis: 1 in 3 pregnant women is obese; 1 in 10 children are diagnosed with an NDD; and 1 in 68 are diagnosed with an ASD. Further, people with ASD experience health disparities, including increased morbidity and lower life expectancy. Thus, robust understanding of the maternal obesity-offspring neurodevelopment link may reduce disparities in the incidence and outcomes of ASDs.

Methods: Genomic technologies allow us to examine the unique molecular signature of obesity on the genomes of mother and child. DNA methylation is an epigenetic modification that both reflects and regulates gene expression during development. The placenta is a birth byproduct that contains important clues about early brain development due to the presence of unique DNA methylation landscapes. During pregnancy, placental DNA, which is of fetal origin, is released into the maternal bloodstream as cell free fetal DNA (cffDNA). The placental DNA methylation profiles can be examined non-invasively from maternal blood samples. This study leveraged naturally obese rhesus macaques with a rigorously defined body composition score that gave birth to offspring with altered behavior in approximately 50% of male offspring. Lean control dams pregnant with male fetuses were matched to obese dams distributed into three groups: (1) untreated, (2) calorie restricted, and (3) treated with pravastatin (a statin medication). CffDNA was collected from maternal blood at 4 time points. DNA was isolated from the cortex and hippocampus of 6-month old infants after behavioral testing.

Results: cffDNA methylation profiles can distinguish obese from lean-exposed fetuses. These profiles represent alterations to genes involved in neurodevelopment, metabolism, and the regulation of gene expression. Matched brain samples are currently being sequenced and analyzed for integration with infant behavioral analyses.

Conclusions: This work is the first to generate epigenetic profiles of both placental and brain DNA in a non-human primate model of obesity. Findings may be translated to identify the risk for NDDs and ASDs in human pregnancies, and to guide behavioral interventions to mitigate the disparities associated with prenatal obesity and ASDs.

3

8:00 AM-9:15 AM

POTENTIAL PREGNANCY PREVENTION PATHWAYS FOR AUTISM SPECTRUM DISORDER

Rebecca Schmidt, PhD¹, Amanda Goodrich, PhD², Daniel Tancredi, PhD², Ana-Maria Iosif, PhD², Yihui Zhu, PhD Candidate², Kelly Bakulski, PhD³, Janine LaSalle, PhD²

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Background: Gestational environment and nutritional exposures have critical influences on neurodevelopment and growing evidence suggests a role in autism etiology.

Methods: Children born in California from 2000-2007 and enrolled in the population-based CHARGE (Childhood Autism Risks from Genetics and Environment) case-control study at ages 2-5 years were clinically confirmed to have autism spectrum disorder (ASD) or typical development (TD) at the MIND Institute. Younger high-risk siblings of children with ASD, born in the MARBLES (Markers of Autism Risk in Babies: Learning Early Signs) prospective cohort study from 2006-2013 were clinically assessed at the MIND Institute at 3 years of age for ASD, other non-typical development (non-TD), or TD. In each study, average daily folic acid and other nutrient intakes were quantified for mothers based on reported vitamin and supplement use for each month before and during pregnancy. Air pollution and pesticide exposures were linked to addresses. In MARBLES, whole-genome bisulfite sequencing and EPIC umbilical cord blood and placenta tissue DNA methylation were examined across exposures and outcomes.

Results: In CHARGE we found a 40% reduced risk for ASD in the children of mothers taking prenatal vitamins and higher average daily (600+ mcg) folic acid near conception. There was evidence for a linear dose-response trend and gene-environment interactions. In MARBLES, we found a significant association between taking prenatal vitamins in the first pregnancy month and half the recurrence risk of ASD in younger siblings (RR_{adjusted}=0.47; 95% CI, 0.27 to 0.83). In both studies, the associated effects were specific to the first month of pregnancy and appeared specific to ASD symptoms and diagnosis. Folic acid appeared to attenuate ASD risk associated with prenatal environmental contaminant exposures, including air pollution, pesticides, and phthalates.

Conclusion: Maternal contaminant exposures that are linked with increased risk for the child developing ASD are more common in populations that experience health disparities, while potentially protective maternal prenatal vitamin intake is less common. ASD risk could be reduced by taking folic acid supplements early in pregnancy, especially for those who are genetically or environmentally susceptible. Shared underlying mechanisms behind these associations could inform pathways for prevention and public health recommendations to reduce the disease burden of autism.

Symposium 44

8:00 AM-9:15 AM

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8:00 AM-9:15 AM

CHRONIC DISEASE SELF-MANAGEMENT FOR COMPLEX AND CHALLENGING CLINICAL POPULATIONS

Martha Sajatovic, MD¹, Mark S. Bauer, MD², Bethany M. Kwan, PhD, MSPH³, Jeanette Waxmonsky, PhD³¹University Hospitals Cleveland Medical Center, Gates Mills, OH; ²Harvard Medical School, Roslindale, MA; ³University of Colorado Anschutz Medical Campus, Aurora, CO

Despite considerable progress in the development and efficacy of behavioral interventions for chronic health conditions, self-management for people with multi-morbidity or specific challenging conditions is often suboptimal. Additionally, some approaches may not be practical for implementation in real-world settings and thus fail to be widely used. This symposium will describe self-management approaches as applied to individuals who are challenged with stigmatizing and or complex comorbidity, and emerging research that applies self-management on a broad scale and which is patient need-driven. All these approaches include personal goal-setting and alignment with healthy behaviors. The first speaker will describe developing, testing and implementing a collaborative /chronic care model to address multi-morbidity in patients with mental disorders. Life Goals Collaborative Care (LGCC) is a clinician-facilitated self-management approach based on social cognitive theory. LGCC sessions feature interactive discussions on personal goals, healthy behavior changes and action planning to cope with current symptoms. Next, our second speaker will describe iterative work based upon a self-management curriculum that blends elements of LGCC combined with diabetes education and self-management training for individuals with serious mental illnesses such as schizophrenia, bipolar disorder and major depression and comorbid diabetes. This intervention, Targeted Training in Illness Management (TTIM) uses peer educators to co-deliver this group-format self-management program in conjunction with a nurse educator. Finally, our third speaker will describe adaptation and implementation of TTIM for the Invested in Diabetes study, a pragmatic comparative effectiveness trial of patient-driven vs standardized diabetes Shared Medical Appointments (SMAs). Guided by the Replicating Effective Programs implementation framework, adaptations to the instructor's manual, patient handbook, practice trainings, outcomes assessments, and fidelity monitoring were made to fit the "real-world" primary care diabetes context. Following completion of the 3 presentations, our discussant, an expert on implementing interventions in real-world practice settings will pull together the presentations by pointing out the shared and differing elements of the various interventions, which depend on both the intervention curriculum, patient characteristics, target outcomes, and intervention delivery context.

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SELF-MANAGEMENT APPROACHES TO PROMOTE MENTAL AND PHYSICAL HEALTH AMONG INDIVIDUALS WITH CHRONIC HEALTH CONDITIONS

Martha Sajatovic, MD¹¹University Hospitals Cleveland Medical Center, Gates Mills, OH

Chronic disease self-management has emerged as an evidence-based set of practices that are effective in improving the health of people with multiple morbidities. Incorporating these practices into standard clinical care may be a way to enhance uptake and impact. Targeted Training in Illness Management (TTIM) was originally developed as a group-format self-management curriculum that blends elements of Life Goals /Collaborative Care (LGCC) and the Diabetes Awareness and Rehabilitation Training Program (DART) to provide diabetes education and self-management training for individuals with serious mental illnesses (SMI) such as schizophrenia, bipolar disorder and major depression and comorbid diabetes. TTIM uses trained peer educators to co-deliver this intervention in conjunction with a nurse educator. TTIM also targets behaviors directly or indirectly related to diabetes vulnerability among people with SMI including social isolation/stigma, inactivity, poor diet, and recreational use of drugs or alcohol. A prospective 1-year randomized controlled trial (RCT) comparing TTIM vs. usual care in 200 individuals with SMI, mean age 52.7 years, 64% women, 54% African-American, found that compared to usual care, individuals in TTIM had significant improvement in depressive symptom severity and overall functioning. While outcomes for participants in TTIM and TAU were similar on general health and overall serum HbA1c, a standard measure of longer-term diabetes control, TTIM was associated with better glycemic control for those with at least fair baseline glycemic control defined as an HbA1c ≤ 7.5 . The study team has subsequently adapted TTIM for use in other research samples with complex comorbidity including individuals with SMI and epilepsy, individuals with Parkinson's disease and comorbid depression and in young (< age 65 years) African-American men who have experienced a stroke or transient ischemic attack. Key study design elements have included qualitative methods to evaluate barriers and facilitators to self-management in target populations and iterative intervention refinement using key stakeholder input (patients, family members and clinicians). Summative findings suggest that evidence-based self-management approaches can reduce depression, chronic disease complications and improve disease-specific health outcomes. A future challenge is to determine how these approaches are best scaled-up and embedded into current models of care.

2

8:00 AM-9:15 AM

THE LIFE GOALS SELF-MANAGEMENT PROGRAM TO ENHANCE SELF-MANAGEMENT SKILLS FOR INDIVIDUALS WITH MOOD DISORDERS: HISTORY, EVIDENCE, PRINCIPLES, AND METHODS

Mark S. Bauer, MD¹

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Bipolar disorder is characterized by persistent symptoms, high risk for suicide, and low rates of treatment adherence. In the 1990s our work with individuals with bipolar disorder made clear the limitations of the traditional medical model alone (focusing primarily on medications and support) in improving outcome for this condition. In consultation with experts in the field, and individuals with the condition, we developed and tested the Life Goals Collaborative Care program, a self-management intervention for bipolar disorder. We subsequently conducted 13 randomized controlled trials and program evaluations of Life Goals in various iterations, including group or individual, embedded in a collaborative care model or as a stand-alone, and via clinical video teleconferencing for individuals or groups.

Life Goals is based on Bandura's Social Cognitive Theory and draws heavily on motivational interviewing and cognitive-behavioral techniques. Unlike traditional treatments, Life Goals begins with a facilitator helping the individual to elucidate their life's values and goals, prior to focusing on symptom management. Next, individuals work with their facilitator to develop a Personal Symptom Profile, review their coping responses to symptoms, and strengthen their healthy coping responses and revise their less-healthy coping responses in light of their previously identified values and goals. Finally, individuals develop an Action Plan, and strategize ways to make the best use of their visits with their clinicians.

Although Life Goals was developed initially for manic and depressive symptoms, Life Goals modules have been developed to address common comorbidities, both mental and physical. The emphasis in all Life Goals modules is on wellness and maximizing an individual's potential both in managing their symptoms and in their wider life. Free on-line Life Goals facilitator training is now available to clinicians and peer specialists.

3

8:00 AM-9:15 AM

ADAPTATION AND IMPLEMENTATION OF THE INVESTED IN DIABETES STUDY: A PRAGMATIC TRIAL OF THE TARGETED TRAINING IN ILLNESS MANAGEMENT CURRICULUM

Bethany M. Kwan, PhD, MSPH¹, Jenny Rementer, MA², Dennis Gurfinkel, MPH², Natalie Ritchie, PhD³, Phoutdavone Phimphasone-Brady, PhD¹, Martha Sajatovic, MD⁴, Jeanette Waxmonsky, PhD¹

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Background: Diabetes group visits are historically challenging to implement in primary care. Pragmatic trials optimally use existing staff to deliver the intervention and allow flexibility in adherence and delivery.

Methods: The Invested in Diabetes study is an ongoing pragmatic cluster randomized comparative effectiveness trial testing two group visit models for delivering the Targeted Training in Illness Management (TTIM) curriculum for diabetes in primary care. In the standardized model, TTIM is delivered by a health educator, with topics in a set order. In the patient-driven model, TTIM is delivered by a multidisciplinary care team (health educator, behavioral health provider, and peer mentor), with topic order selected by patients. As a pragmatic trial, group visits are delivered by existing clinic staff in real-world settings. To support the 22 practices randomly assigned to condition, we used the Replicating Effective Programs (REP) implementation framework plus intensive practice facilitation. With practice stakeholder input, we adapted TTIM and the study protocol to fit their needs and context. Patient-reported outcomes were streamlined to those with clinical utility. We revised content, structure, and visual appeal of the TTIM instructor's manual and patient handbook. We developed and refined trainings and outcome assessments to ensure feasibility, sustainability, and scalability for both the current project and future dissemination. Nine in-person and virtual trainings have been conducted with 44 practice staff. Around 80 practice coaching sessions have been done to help practices start and sustain their group visits. Research staff dedicated to electronic health records extracts collaborated with practices to identify efficient and feasible data request processes. Finally, the study team observes one session per practice/quarter to monitor fidelity to the TTIM curriculum and assigned group visit model features, and document adaptations to content or delivery of the intervention.

Results: Practices preferred 6 two-hour sessions over 12 one-hour sessions. Training evaluations showed satisfaction with the trainings increasing over time as trainings became more efficient and engaging, and more accessible via remote options. Practices delivered test data extracts in summer 2019; data quality assessments revealed variability in accuracy and completeness. Eight months into the 24-month implementation period, 42 cohorts have gone live, with 295 patients enrolled and 175 completed, out of the goal of 1440.

Conclusion: To retain rigor in the study design, the REP framework allowed for adaptation to context while establishing core elements that must remain in place for hypothesis testing. The Invested in Diabetes study implementation processes help to ensure rigor of the design as well as feasibility of delivery in real-world primary care practices.

Symposium 45

8:00 AM-9:15 AM

CURRENT STATE OF THE ART IN DIGITAL INTERVENTIONS FOR ADDICTIVE BEHAVIORS

Anne H. Berman, N/A¹, Bridgette Bewick, PhD², Marina C. Fodor, MA³, Claes Andersson, PhD⁴, Jason Satterfield, PhD⁵, Meredith Meacham, PhD, MPH⁶, Derek D. Satre, PhD⁶

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Two years ago, a *Special Issue on E-health Interventions for Addictive Behaviors* was published in the *International Journal of Behavioral Medicine*. The issue included 16 articles, addressing topics like methodologies for developing e-health interventions, how to engage intervention users and establish a working alliance, and empirical findings from randomized controlled trials and a naturalistic study. The issue began with two articles offering a wide perspective on the field, with a systematic review of reviews on digital interventions for problematic alcohol use, as well as a too for describing e-health interventions as a step towards standardized reporting in order to facilitate communication about the interventions and comparisons between them. This symposium will follow up on the Special Issue by bringing together some of the contributors for presentations of their current work and a discussion on the current state-of-the-art in digital interventions for addictive behaviors. This symposium is sponsored by SBM's Scientific and Professional Liaison Council (SPLC), in partnership with the International Society of Behavioral Medicine (ISBM).

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8:00 AM-9:15 AM

SKILLS TRAINING FOR REDUCING RISKY ALCOHOL USE IN APP FORM AMONG ADULT INTERNET HELP-SEEKERS

Anne H. Berman, N/A¹, Olof Molander, MSc², Miran Tahir, BSc², Philip Törnblom, BSc², Mikael Gajecki, PhD², Kristina Sinadinovic, PhD², Claes Andersson, PhD³

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Background: Problematic alcohol use in Sweden occurs among 16 % of the adult population. Digital interventions of varying intensity have shown positive effects in contributing to reductions in problematic use, and the TeleCoach app has shown positive effects in non-treatment-seeking university students with excessive drinking (Gajecki et al., 2017). This pilot study evaluated the app among adult internet help-seekers, and motivated continued data collection in the current target group.

Methods: Adult internet-help seekers, recruited via advertisement, were included if they scored ³6 (women) or ³8 (men) on the Alcohol Use Disorders Identification Test (AUDIT). Those with depression scores of ³31 on the Montgomery Åsberg Depression Rating Scale (MADRS-S) or problematic drug use scores of ³8 on the Drug Use Disorders Identification Test (DUDIT) were contacted for a telephone interview and included following clinical assessment; if not reached they were excluded. Participants randomized at a 1:1 ratio to the TeleCoach™ web-based app or to a web-based app with information texts from primary care-based self-help material for changing problematic alcohol use. At six-week follow-up, the primary outcome was the number of standard drinks per past week (Timeline-Followback).

Results: Of 147 persons assessed for eligibility, 89 were assigned to the intervention group (n=42) or control group (n=47). Average AUDIT levels at baseline were ³18. The baseline number of standard drinks per week was 32.73 (SD 21.16) for the intervention group, and 26 (4.08) for the control group; at 6-week follow-up it was 12.73 (10.52) and 13.48 (11.13) for the intervention and control groups, respectively. No significant between-groups effects occurred, but within-group changes over time were significant ($F(1, 55)=43.98$; $p<0.000$), with an effect size of 1.37 for the intervention group and 0.92 for the control group.

Conclusions: The results suggest that web-based apps can be of help to internet help-seekers motivated to reduce problematic alcohol use. We have proceeded with the planned larger randomized, controlled study and will present 6-week follow-up data for the entire study sample (n=1000) in this presentation.

2

8:00 AM-9:15 AM

REALISING THE POTENTIAL OF ELECTRONIC BRIEF PERSONALIZED FEEDBACK INTERVENTIONS FOR ALCOHOL USE: CURRENT STATE OF THE EVIDENCE

Bridgette Bewick, PhD¹, John McAlaney, PhD², Robert Dempsey, PhD³, Helen Crosby, PhD⁴

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Developing and implementing effective measures to prevent and intervene with harmful alcohol use remains imperative if we are to reduce the global burden of alcohol related harms and improve the lives of those affected. Brief alcohol interventions offer one means of rapidly intervening to reduce and avoid harmful alcohol use, particularly when delivered electronically (eBAIs). Delivery of electronic personalized feedback has been heralded as affording effectiveness of scalability and implementation for eBAIs. This presentation will present findings from a recent rapid review investigating the effectiveness and efficacy of electronic brief personalized feedback interventions (ePFIs).

Whilst there has been a rapid growth in the use and sophistication of ePFIs aiming to improve alcohol use outcomes, there remain a number of challenges for the field to address. There is a relative paucity of information on what motivates individuals to engage with these online programs under voluntary conditions. Studies in general populations often struggle to recruit, retain and engage participants and similar issues with participant attrition are seen amongst university student samples. If we are to realize the potential for ePFIs to contribute to reducing the global burden of alcohol misuse we must advance our understanding of how to successfully engage individuals with such interventions. Further evidence is required to ascertain the impact of additional booster sessions to maintain positive changes over the medium-to-longer term. An additional challenge is the cloud of skepticism around the use of self-report data when evaluating the effectiveness of eBAIs that include personalized feedback.

In this presentation we will consider future directions of the field and how these might advance our understanding of the behavioral science behind ePFIs. In addition we will consider the potential for new technologies to increase the effectiveness and successful implementation of personalized feedback, allowing us to intervene early and thereby contribute to a reduction in the global burden of alcohol related harms and improve the lives of those affected.

3

8:00 AM-9:15 AM

PARTICIPANT SATISFACTION WITH COMPUTER-DELIVERED INTERVENTION COMPONENTS AND ITS RELATION TO ALCOHOL USE OUTCOMES

Marina C. Fodor, MA¹, Emily R. Grekin, PhD², Jessica R. Beatty, PhD², Steven J. Ondersma, PhD³

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Background: Participant satisfaction has long been considered a key criterion in the development and evaluation of behavioral interventions. This is particularly true of computer-delivered brief interventions (CDBIs), which often incorporate user-centered design principles from the larger software development community. However, previous attempts to maximize participant satisfaction have rarely used experimental optimization techniques, such as factorial trials, to examine the association between intervention elements and satisfaction. Further, there is little evidence clearly demonstrating that participant satisfaction is associated with increased change in behavioral outcomes.

Method: This study used a factorial design to examine (1) participant satisfaction with individual elements of a CDBI for heavy alcohol use, both alone and in combination; and (2) whether these subjective reactions were associated alcohol use outcomes at 3-month follow-up. Data were drawn from a larger CDBI optimization study involving 378 university undergraduates. This study used a factorial design to test the efficacy of 16 combinations of four distinct intervention components: (1) empathic reflections, (2) motivational interviewing strategies, (3) presence of a spoken voice, and (4) presence of an animated narrator.

Results: Separate 2x2x2 ANOVAs showed no main effects for any of the four intervention components on participant satisfaction. However, there was a significant two-way, empathic reflections X spoken voice interaction ($F(1, 324) = 5.57, p = .019, \eta^2 = .017$). An examination of means revealed that a spoken voice had a larger positive effect (i.e., produced greater increases in liking) when empathic reflections were absent versus when they were present. Regarding the association between participant satisfaction and alcohol use, we found that higher participant satisfaction was associated with greater reductions in mean drinks per day over the course of the study ($\beta = -.18, t(316) = -3.25, p < .01; R^2 = .07, F(7, 316) = 3.33, p < .01$).

Discussion. CDBI components, both individually and in combination, were largely unrelated to participant satisfaction. However, participant satisfaction was associated with greater reductions in alcohol use. Although the importance of participant satisfaction is supported by these findings, it is unclear which intervention components are most strongly associated with satisfaction.

4

8:00 AM-9:15 AM

SKILLS TRAINING FOR REDUCING RISKY ALCOHOL USE IN APP FORM AMONG ADULT INTERNET HELP-SEEKERS

Claes Andersson, PhD¹

¹Malmö University, Malmö, Skane Lan, Sweden

Background: Problematic alcohol use in Sweden occurs among 16 % of the adult population. Digital interventions of varying intensity have shown positive effects in contributing to reductions in problematic use, and the TeleCoach app has shown positive effects in non-treatment-seeking university students with excessive drinking (Gajecki et al., 2017). This pilot study evaluates the app among adult internet help-seekers. This pilot study evaluated the app among adult internet help-seekers, and motivated continued data collection in the current target group

Methods: Adult internet-help seekers, recruited via advertisement, were included if they scored ³6 (women) or ³8 (men) on the Alcohol Use Disorders Identification Test (AUDIT). Those with depression scores of ³31 on the Montgomery Åsberg Depression Rating Scale (MADRS-S) or problematic drug use scores of ³8 on the Drug Use Disorders Identification Test (DUDIT) were contacted for a telephone interview and included following clinical assessment; if not reached they were excluded. Participants randomized at a 1:1 ratio to the TeleCoach™ web-based app or to a web-based app with information texts from primary care-based self-help material for changing problematic alcohol use. At six-week follow-up, the primary outcome was the number of standard drinks per past week (Timeline-Followback).

Results: Of 147 persons assessed for eligibility, 89 were assigned to the intervention group (n=42) or control group (n=47). Average AUDIT levels at baseline were ³18. The baseline number of standard drinks per week was 32.73 (SD 21.16) for the intervention group, and 26 (4.08) for the control group; at 6-week follow-up it was 12.73 (10.52) and 13.48 (11.13) for the intervention and control groups, respectively. No significant between-groups effects occurred, but within-group changes over time were significant ($F(1, 55) = 43.98; p < 0.000$), with an effect size of 1.37 for the intervention group and 0.92 for the control group.

Conclusions: The results suggest that web-based apps can be of help to internet help-seekers motivated to reduce problematic alcohol use. We have proceeded with the planned larger randomized, controlled study and will present 6-week follow-up data for the entire study sample (n~1000) in this presentation.

5

8:00 AM-9:15 AM

EFFICACY OF A FACEBOOK INTERVENTION ADDRESSING CIGARETTE SMOKING AND HEAVY EPISODIC DRINKING

Meredith Meacham, PhD, MPH¹, Danielle Ramo, PhD², Larissa Maier, PhD³, Judith J. Prochaska, PhD, MPH⁴, Kevin Delucchi, PhD³, Derek D. Satre, PhD⁵¹UCSF, San Francisco, CA; ²Hopelab, San Francisco, CA; ³University of California San Francisco; ⁴Stanford University, Stanford, CA; ⁵University of California San Francisco, San Francisco, CA

Background: Co-occurrence of tobacco use and heavy episodic drinking (HED; 5+/4+ drinks per occasion for men/women) is common among young adults; both warrant attention and intervention. This randomized trial investigated whether a Facebook-based smoking cessation intervention addressing both tobacco use and HED would increase smoking abstinence compared to a similar intervention only addressing tobacco.

Methods: Participants were 179 young adults (ages 18-25) in the United States recruited from Facebook and Instagram who reported cigarette smoking at least 4 days/week and past-month HED. Participants were randomized to the Smoking Tobacco and Drinking (STAND) intervention (N=85) or the Tobacco Status Project (TSP), a tobacco-only intervention (N=94), stratified on readiness to quit smoking and daily smoking status. Both interventions included 90 daily Facebook posts and weekly live counseling sessions in secret Facebook groups tailored to readiness to quit. Biochemically verified smoking abstinence was assessed at 3-, 6-, and 12-months follow up.

Results: Neither biochemically verified nor self-reported smoking abstinence differed significantly between STAND and TSP conditions at any time point or in longitudinal analyses. Retention (83% at 3 months, 66% at 6 months, 84% at 12 months) did not differ by condition. At 12-months, abstinence rates by condition (intent to treat) were 3.5% in STAND vs. 0% in TSP (biochemically-verified) and 29.4% in STAND vs. 25.5% in TSP (self-reported). Challenges with readability of test strips and nicotine vaping in remote biochemical verification may have contributed to these differences in abstinence rates. Significant reductions over time were observed for cigarette use and dependence (Fagerstrom Test of Cigarette Dependence), alcohol use and problematic use (AUDIT-C), but these did not significantly differ by condition. At 3 months only, STAND participants were more likely to be in a preparation or higher stage of change for quitting smoking ($p=0.025$) and were less likely to report vaping nicotine ($p=.01$). In post-hoc moderation analyses, participants who reported more frequent HED at baseline (15-30 days/month) (N=37) had greater reduction in FTCD scores from baseline to 3-months in STAND compared to TSP ($p=.031$).

Conclusions: Addressing both alcohol and tobacco did not lead to significant differences in smoking abstinence compared to addressing only tobacco. Future interventions targeting both alcohol and tobacco use may be more effective for young adults who engage in frequent HED.

Symposium 46

8:00 AM-9:15 AM

RETURNING GENOMIC INFORMATION TO PATIENTS AND FAMILIES: IMPLICATIONS FOR RESEARCH, POLICY AND PRACTICE

Megan A. Lewis, PhD¹, Christine M. Rini, PhD², Ryan S. Paquin, PhD³, Barbara B. Biesecker, PhD, MS⁴, William Klein, PhD⁵¹RTI International, Seattle, WA; ²Northwestern University Feinberg School of Medicine, Chicago, IL; ³RTI International, Minneapolis, MN; ⁴RTI International, Washington DC, DC; ⁵National Cancer Institute, NIH, Bethesda, MD

Genome sequencing is increasingly used in research and specific clinical contexts to predict health risks and identify the cause of rare disease. Due to plummeting costs and greater accuracy of results, sequencing is anticipated to be integrated into mainstream clinical practice in the near future. Results from sequencing provide information on gene variants that are both related (primary findings) and unrelated (secondary findings) to the indication for testing. Little is known about the best practices for returning results and the ways patients respond to the information. Across studies, evidence suggests that a majority of research participants are interested in learning secondary findings, whether they are actionable or not. Participants report that they value the information, for example, believing it will help them protect their own and their family's health in the future. Further evidence suggests that research participants may confuse primary and secondary findings. To minimize this confusion and realize health benefits from results, evidence is needed to guide patients in making informed decisions whether to receive secondary findings, and whether to act on them when they are actionable. This symposium will address the psychological and behavioral responses of adults who receive secondary findings either about themselves or their child. Collectively, the results presented may be used to guide future research, policy, and clinical practice. The first presentation will describe results from The North Carolina Clinical Genomic Evaluation by NextGen Exome Sequencing study designed to inform return of non-medically actionable secondary findings to patients. The second presentation will share findings from the North Carolina Newborn Exome Sequencing for Universal Screening study that examined if a decision aid, that was tailored and responsive to parental input, could support parents in making informed decisions to receive secondary genomic information about a child's genetic risk that varied by age (newborn to adult) and medical actionability (treatment available or not). The third presentation will describe findings from two NIH sequencing cohorts on participants' responses to return of medically actionable secondary findings and negative secondary finding reports. The discussant will highlight the research, policy and practice implications of the findings and what they suggest about social and behavioral research in genomics.

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1

8:00 AM-9:15 AM

IS IT HARMFUL FOR RESEARCH PARTICIPANTS TO LEARN ABOUT AND BE ABLE TO REQUEST NON-MEDICALLY ACTIONABLE SECONDARY FINDINGS FROM DIAGNOSTIC EXOME SEQUENCING?

Christine M. Rini, PhD¹¹Northwestern University Feinberg School of Medicine, Chicago, IL

Background: Diagnostic genomic sequencing examines possible genetics cause of suspected genetic disorders. It analyzes numerous genes simultaneously to provide diagnostic findings that are positive, uncertain, or negative. Yet, it can also yield unexpected “secondary” findings about health risks or conditions that are unrelated to the primary goal of sequencing. Experts have debated how and whether to return secondary findings to patients. Consensus supports returning medically actionable secondary findings—those revealing a risk that can be avoided or mitigated—but debate continues for those with less or no medical actionability (non-medically actionable secondary findings; NMAFs). For example, there are no evidence-based ways to reduce elevated genetic risk for the common form of Alzheimer’s disease.

Methods: The North Carolina Clinical Genomic Evaluation by NextGen Exome Sequencing (NCGENES) study was designed to inform the debate about whether to return NMAFs to patients. Pediatric and adult patients with suspected genetic disorders were enrolled in NCGENES to evaluate the clinical utility of diagnostic exome sequencing and best practices for returning diagnostic findings. Nested within NCGENES was a randomized trial for eligible adult patients (n=335): half were randomized to be educated about 6 categories of NMAFs and were able to request them (Decision group); the other half did not receive this education or the ability to request NMAFs (Control group). Psychosocial and behavioral outcomes were assessed at baseline (Time 1), 2 weeks after an in-person meeting at which we returned diagnostic findings and educated the Decision Group about NMAFs and how to request them (Time 2), then 3 and 6 months later (Times 3 and 4).

Results: General estimating equations examined effects of group (Diagnostic vs Control) and time. The Decision group had lower test-related distress and generalized anxiety than the Control group at Time 2 ($p < .05$), but these differences were not significant at Times 3 or 4. There were no group differences in test-related positive experiences or uncertainty, depressive symptoms, decision regret, lifestyle behaviors, healthcare utilization, or information seeking.

Conclusions: We observed no adverse psychosocial or behavioral effects of educating adult patients about, and offering them the ability to request, NMAFs. Next we will investigate effects of actually requesting and learning these findings.

2

8:00 AM-9:15 AM

DOES USING A DECISION AID SUPPORT PARENTAL DECISION MAKING ABOUT WHOLE EXOME SEQUENCING OF THEIR CHILDREN? RESULTS FROM THE NC-NEXUS STUDY

Ryan S. Paquin, PhD¹, Christine M. Rini, PhD², Rita Butterfield, PhD³, Katherine Souris, MPH⁴, Laura Milko, PhD⁵, Myra Roche, MS, CGC⁶, Donald Bailey, Jr., PhD⁷, Jonathan Berg, MD, PhD⁸, Cynthia Powell, MD⁹, Megan A. Lewis, PhD¹⁰

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Background: Little is known about whether or not parents experience negative psychological outcomes from learning about their child’s genetic risk or how interventions can support decision making and outcomes. In response, the NICHD and NHGRI funded four centers in the United States as part of their Newborn Sequencing in Genomic Medicine and Public Health (NSIGHT) program. These centers explored the implications, challenges and opportunities of genomic sequencing in the newborn period. The North Carolina Newborn Exome Sequencing for Universal Screening study (NC NEXUS) examined if decision aids, which were tailored and responsive to parental input, could help support informed decision making and mitigate negative consequences of making decisions to receive information about a child’s genetic risk.

Methods: 204 families (190 couples and 14 single mothers) participated in this part of the study. All parents completed a decision aid that provided educational information and values clarification about receiving medically actionable genetic risk information. Then roughly 2/3 were randomized to complete a second decision aid that provided education and values clarification about additional findings related to carrier status, medically actionable adult genetic risk, and non-medically actionable childhood genetic risk information. All parents completed questionnaires at baseline, and either three or four follow-up periods according to their randomization and choice to receive additional findings or not. Questionnaires measured decision making outcomes, distress, and decision aid perceptions.

Results: Overall, parents found the decision aids to be supportive of their decision making (scale range 1-6; $M = 4.93-5.08$). On average, parents who were given the option to request additional information about their child’s genetic risk related to carrier status, medically actionable adulthood information or non-medically actionable childhood information did not experience significantly more decision regret ($M = 1.56$, $SE = 0.08$ vs. $M = 1.54$, $SE = 0.11$, $t(73) = 0.15$, $p = .881$), distress ($M = 1.46$, $SE = 0.04$ vs. $M = 1.44$, $SE = 0.06$, $t(73) = 0.35$, $p = .728$) or concerns about their child’s future health ($M = 2.52$, $SE = 0.11$ vs. $M = 2.19$, $SE = 0.16$, $t(73) = 1.65$, $p = .103$ compared to parents who received medically actionable information only).

Conclusions: Bioethicists argue that parents should not be given the choice to receive non-medically actionable or adulthood genetic risk information about their children because the process of deciding whether or not to receive this information can be detrimental to parents’ well-being. The results of this study do not support this viewpoint. Very few studies have examined decision support in this context, and future research should continue to probe if certain parental subgroups experience negative outcomes.

3

8:00 AM-9:15 AM

PERCEIVED UTILITY AND INTENTIONS TO CHANGE HEALTH BEHAVIORS AND SCREENING AMONG AFRICAN DESCENDANTS FOLLOWING RECEIPT OF NEGATIVE SECONDARY FINDINGS FROM GENOME SEQUENCING

Barbara B. Biesecker, PhD, MS¹, Priscilla Chan, MS², Paul KJ Han, MD, MA, MPH³, William M Klein, PhD⁴, Leslie B Biesecker, MD⁵, Katie Lewis, ScM, CGC²

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Purpose: Genome sequencing is similar to other health screening tests in that it aims to identify individuals at higher risk for cancer, heart disease and other conditions. Interrogating exomes for actionable secondary findings (SFs) most often leads to negative results, meaning no pathogenic variant has been identified among 59 genes endorsed by the American College of Medical Genetics as actionable SFs. Although negative results indicate lower risk for heritable conditions, they do not eliminate other risk factors. A theoretical concern is that the return of negative results might decrease routine disease prevention and screening behaviors, particularly among African descendants who already have lower rates of screening. The purpose of this study was to assess responses to negative results among participants from this under-represented population.

Methods: Data were received from 285 adults enrolled in the NIH ClinSeq® cohort study who self-identify as African descendants. Negative SF results were returned by FedEx with a link to a website explaining the results. Two weeks after logging into the website, participants were emailed a link to an on-line survey to assess understanding and the perceived utility of the information.

Results: Respondents all logged into the website, for an average of 7 mins., 15 secs. When asked how likely they were to change their health-related behaviors based on their negative results, 26.4% were unsure and the remainder of responses were normally distributed. When asked about their intentions to pursue future screening, 81.5% reported no change in mammography; 74.2% reported no change in colonoscopy; and 71.3% no change in cholesterol screening. The remainder intended to increase their screening. Forty one percent of participants self-rated their understanding of their results as “quite a bit” or “extremely well,” whereas only 56.8% rated their value as “very worthwhile.”

Conclusions: Generally, participants had little intention to change their health behaviors and high intentions to continue cancer and cholesterol screening following receipt of a negative SFs report, suggesting sound understanding of their residual disease risks. Although there was no indication of intentions to decrease routine screening, the perceived value of learning negative heritable risk results among this under-represented population remains unclear.

Symposium 47

8:00 AM-9:15 AM

WE DON'T SUFFER ALONE: THE SOCIAL CONTEXT OF FEAR OF CANCER RECURRENCE

Emily C. Soriano, M.A.¹, Jean-Philippe Laurenceau, PhD¹, Andrea Cohee, PhD, RN², Tracey A. Revenson, PhD³, Lauren C. Heathcote, PhD⁴

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Fear of cancer recurrence (FCR) is among the most commonly reported and important concerns of not only cancer survivors, but also their loved ones. Despite increased efforts to understand and treat FCR in recent years, its social/interpersonal context has received little empirical attention. The Social-Cognitive Processing Model posits that self-disclosing cancer-related fears, worries, and concerns is a critical mechanism by which survivors and their loved ones adapt and adjust over the course of survivorship. In support of this model, a number of studies have shown links between inhibited disclosure and cognitive processing, avoidance, and psychological distress among cancer patients. However, very little work has examined the association between disclosure—or rather, *inhibited disclosure*—and FCR. In this symposium, we will integrate these literatures by presenting cutting-edge findings linking interpersonal communication processes to FCR among cancer survivors, their loved ones, and their health providers, across the lifespan. First, using a longitudinal design with childhood cancer survivors, Heathcote will present findings uncovering the nature of communication about FCR in parent-child dyads, showing that maternal distress and coping near the time of the child's diagnosis predict future communication styles. Second, using a cross-sectional sample of breast cancer survivors, Cohee will discuss findings linking survivors' perceptions of their health care providers as unavailable, unresponsive, or uninterested in their disclosure of cancer-related concerns (*social constraints*) to their own FCR. Third, Soriano will review and integrate recent empirical studies from their research team using both short- and long-term longitudinal designs. These recent studies examined links between forms of *inhibited disclosure* (including social constraints and *protective buffering*, which occurs when one inhibits disclosure in order to protect a loved one) and FCR among cancer survivors and their spouses/partners, using the Social-Cognitive Processing Model as a unifying theoretical framework. Finally, Revenson will act as discussant to identify cross-cutting themes, suggest future directions for research in this new topic area, and describe implications for treatment of FCR across the lifespan.

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1

8:00 AM-9:15 AM

INHIBITED DISCLOSURE AND FEAR OF CANCER RECURRENCE: A REVIEW OF RECENT EVIDENCE

Emily C. Soriano, M.A.¹, Jean-Philippe Laurenceau, PhD¹, Christine Perndorfer, M.S.², Amy K. Otto, PhD³, Scott Siegel, PhD, MHCD⁴

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Background: Fear of cancer recurrence (FCR) is increasingly recognized as among the most important aspects of psychological adjustment among survivors and their loved ones. Recently, several studies have found that *inhibited disclosure* of cancer-related concerns is linked to increased FCR. The goal of this talk is to summarize and integrate this recent work under a unifying theoretical framework: The Social-Cognitive Processing Model.

Methods: We summarize findings from five empirical studies of two forms of inhibited disclosure (i.e., *social constraints* and *protective buffering*) as predictors of FCR. *Social constraints* occur when one perceives the other as unresponsive, unavailable, or uninterested in one's disclosure, while *protective buffering* occurs when one inhibits disclosure in order to protect the other. Four studies focused on adult survivors of breast cancer and one on parents of adolescent and young adult cancer survivors.

Results: Three studies focused on social constraints and two studies examined protective buffering. Both forms of inhibited disclosure were linked to greater FCR among cancer survivors and/or their loved ones across studies. One of the studies examined both forms of inhibited disclosure simultaneously as predictors of FCR; results suggested that both social constraints and protective buffering are significant, independent within-person predictors of greater FCR.

Conclusions: Results support the Social-Cognitive Processing Model, which argues that self-disclosure is critical to psychological adjustment (including FCR) in survivorship. To date, FCR interventions have not targeted communication processes and few have utilized a family- or couple-focused approach. Yet, findings point to the importance of interpersonal relationship and communication processes for understanding and potentially regulating FCR.

2

8:00 AM-9:15 AM

HEALTH CARE PROVIDER SOCIAL SUPPORT, CONSTRAINTS, AND COMMUNICATION QUALITY AS PREDICTORS OF FEAR OF RECURRENCE

Andrea Cohee, PhD, RN¹, Susan Storey, PhD, RN, AOCNS¹, Victoria Champion, PhD, RN, FAAN²

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Background: Fear of cancer recurrence (FCR) is experienced by 55-90% of breast cancer survivors (survivors). While the effect of significant others' behaviors (social support and constraints—attempts to limit discussions about cancer) on survivors' FCR has been studied, less is known about the effect of health care providers' (HCP) behaviors, such as social support and constraints on long-term FCR. The purpose of this study was to determine the relationship between survivors' FCR and HCP's behaviors in response to long-term survivors attempting to discuss cancer. Additionally, we sought to identify survivors who may be at risk for FCR, which has implications for clinical assessment.

Methods: Survivors who were 3-8 years post-diagnosis and treatment were invited to participate in a descriptive, cross-sectional study about FCR. Women were queried about their perceptions of HCP social support, HCP social constraints, and satisfaction with HCP communication at diagnosis. Means and frequencies were analyzed to describe the sample. Pearson correlations analyzed survivor demographic and HCP factors related to FCR. Variables that significantly correlated with FCR were then entered into a linear regression model.

Results: Survivors were predominantly white (92%), well educated (m=14.5 years, SD=2.7), reported high income (39% earning \$75,000 or more), were an average of 6 (SD=1.5) years from diagnosis, and ranged in age 28-78 years (m=57 years, SD=11.6). Using bivariate analysis, FCR was significantly correlated with HCP social constraints ($r=.22$, $p<.001$), HCP social support ($r=-0.13$, $p<.001$), HCP communication at diagnosis ($r=-0.09$, $p<.001$) and demographic factors including years of education ($r=-0.06$, $p<.05$), current age ($r=-0.34$, $p<.001$), and time from diagnosis ($r=-0.10$, $p<.001$). The final linear regression model was composed of all significantly correlated factors [$F(1, 1103)=37.0$; $r^2=.17$; $p<.001$]. Factors significantly predicting FCR in the model were current age ($\beta=-.33$, $p<.001$), years of education ($\beta=-.12$, $p<.001$), and HCP social constraints ($\beta=.16$, $p<.001$). HCP social support neared significance at $p=.06$.

Conclusions: HCP should be aware that discouraging discussions about cancer may increase FCR. Survivors may worry less about recurrence if HCP have a communication style that is supportive and allows women to talk about breast cancer. Furthermore, survivors who are younger and have fewer years of education are at greater risk for FCR.

3

8:00 AM-9:15 AM

DYNAMICS AND LONGITUDINAL PREDICTORS OF PARENT-CHILD COMMUNICATION ABOUT FEAR OF CANCER RECURRENCE

Lauren C. Heathcote, PhD¹, Lexa K. Murphy, PhD², Kemar Prussien, MS³, Erin Rodriguez, PhD⁴, Amanda Ferrante, BA⁵, Rachel Fisher, BA⁵, Cindy Gerhardt, PhD⁵, Kathryn Vannatta, PhD⁶, Bruce Compas, PhD⁷

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Background: Although 80% of children diagnosed with cancer will survive their disease, many will experience severe, clinically significant fears of cancer recurrence (FCR) that impair quality-of-life. Opportunities to communicate about FCR are likely adaptive for youth, yet parents may experience difficulty knowing how to discuss potential disease recurrence with their children. There are virtually no studies on parent-child communication about FCR to guide the development of supportive interventions. This study had two aims: 1) to characterize mother-child discussions about potential cancer recurrence during childhood cancer survivorship; 2) to determine child medical and parent psychological predictors of communication style (including presence and length of discussion, and maternal positive and negative affect during discussion).

Methods: Mothers (N=67) self-reported psychological distress (post-traumatic stress symptoms) and coping (disengagement) near the time of their child's cancer diagnosis (child ages 5-17 years). Three to four years later, during survivorship, mothers were observed communicating with their children about cancer during a video-recorded 15-minute study task; dyads were not prompted to talk about recurrence. Discussion about recurrence was characterized using theoretical models of FCR as well as established parent-child communication coding schemes.

Results: Almost three-quarters of mother-child dyads discussed potential cancer recurrence; mothers initiated the topic 74% of the time. Higher maternal distress and disengagement coping near the time of initial diagnosis predicted briefer mother-child discussions about recurrence ($\beta = -.28$, $p < .05$). Higher maternal distress near the time of diagnosis was associated with lower levels of maternal positive affect during discussion of recurrence ($\beta = -.41$, $p < .05$), while older child age was associated with higher levels of maternal negative affect during discussion of recurrence ($\beta = .31$, $p < .05$). Medical factors did not predict the presence or nature of recurrence discussions.

Conclusions: Parent psychological factors during their child's cancer diagnosis may impact how they communicate with their child about FCR years later during cancer survivorship. Maternal distress and coping, and developmental factors such as child age, are important to consider when developing guidance to support parents in providing opportunities for their child to communicate about their fears of cancer recurrence.

Symposium 48

8:00 AM-9:15 AM

“WE’RE IN THIS TOGETHER”: NOVEL DYADIC INTERVENTIONS FOR MEDICAL PATIENTS

Talea Cornelius, PhD, MSW¹, Lixin Song, PhD, RN, FAAN², Ethan G. Lester, PhD³, Ana-Maria Vranceanu, PhD⁴, Kelly M. Shaffer, PhD⁵

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Psychosocial research for medical patients has traditionally focused on the individual experiences of patients or their informal caregivers (e.g., family and friends providing care), neglecting the context of their interpersonal relationships. Recent observational and intervention research has provided preliminary evidence for a dyadic framework in which patients and caregivers are viewed as a unit. This framework emphasizes the interaction between patient and caregiver coping, emotional functioning, and health behaviors. The presentations in this symposium provide applications of this dyadic framework in the setting of novel clinical trials, specifically exploring how dyadic interventions address the psychosocial needs and experiences of both patients and their caregivers. In the spirit of SBM's 2020 annual meeting theme: “Finding Innovative Solutions for Tomorrow's Health Challenges”, this symposium focuses specifically on methods of delivering interventions and improving psychosocial outcomes in dyadic samples across diverse medical settings. First, *Ethan Lester* will present results from a proof of concept, single blind, randomized controlled trial (RCT) of a dyadic intervention (Recovering Together) versus an attention placebo educational control, both delivered from hospitalization through discharge. He will report the feasibility, acceptability, and preliminary effect of the intervention in improving symptoms of depression, anxiety and post-traumatic stress in dyads of patients with acute brain injury and their family caregivers. Next, *Talea Cornelius* will present results from an RCT comparing a couples-based behavioral weight loss (BWL) intervention to a BWL plus training in autonomy support (AS) intervention. She will specifically report on changes in perceived social support and associations with weight loss, as well as perception of others' support. Last, *Lixin Song* will discuss the protocol of an RCT of a couples-focused mHealth intervention for symptom management and enhancing quality of life versus usual care plus education (website) among prostate cancer patients and their spouses. Finally, our discussant *Kelly Shaffer* will place these studies within the larger context of dyadic research and will discuss future directions of such clinical research programs.

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1

8:00 AM-9:15 AM

PERCEIVING SUPPORT FOR WEIGHT LOSS AND THE IMPACT OF A SUPPORT-BASED INTERVENTION IN COUPLES

Talea Cornelius, PhD, MSW¹, Emily P. Wyckoff, M.S.², Katelyn Gettens, PhD³, Theodore Powers, PhD⁴, Amy A. Gorin, Ph.D.²

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Objective: Social support from a romantic partner is generally considered beneficial to health, however, recognizing support receipt can be harmful under some circumstances. Given the increasing focus on the potential power of couples-based interventions to change health behavior, the goal of the present study was to elucidate how couples' perceptions of support receipt were impacted by a support-based randomized control trial for weight loss.

Methods: Participants were couples (N = 62; 96.8% married) between ages 18-70 with a BMI between 25-45 kg/m². Couples received 6 months of behavioral weight loss treatment (BWL) or BWL plus training in autonomy support (AS) provision (SDT-WL). Couples self-reported provision and receipt of AS at three, six, and 12 months. Couples also self-reported provision and receipt in directive support (DS) at these interviews. The Truth and Bias Model of Judgment was implemented in SAS v 9.4 (PROC MIXED) to estimate "truth" (i.e., when an individual reports receiving support that a partner reports providing) and similarity "bias" (i.e., when an individual reports receiving support based on the support that they themselves report providing).

Results: Compared to BWL couples, couples in SDT-WL more truthfully perceived the AS that their partner reported providing (SDT-WL: $B = 0.38$, 95% CI [0.22, 0.54], $p < .001$; BWL: $B = 0.14$, 95% CI [-0.02, 0.30], $p = .078$; p -interaction = .042). At 12 months, SDT-WL were also less biased in their perceptions of AS (SDT-WL: $B = 0.42$, 95% CI [0.24, 0.61], $p < .001$; BWL: $B = 0.72$, 95% CI [-0.54, 0.89], $p < .001$; p -interaction = .041). Effects were restricted to AS and not to other types of support that were not targeted by the intervention (i.e., there were no differences in perceptions of DS across conditions).

Conclusion: Couples trained in AS provision more truthfully perceived partner-provided AS and exhibited a decrease in biased perception of partner-provided AS over time. Truthfully perceiving AS may not be harmful within this context due to mutuality, goal orientation, or the fact that AS is a particularly responsive form of support. Future research should parse these possibilities. Perceptions of other types of support, which may be harmful to truthfully perceive (e.g., DS), were not impacted by the intervention.

2

8:00 AM-9:15 AM

TESTING THE EFFICACY OF A COUPLE-FOCUSED, TAILORED MHEALTH INTERVENTION FOR SYMPTOM SELF-MANAGEMENT AMONG MEN WITH PROSTATE CANCER AND THEIR PARTNERS

Lixin Song, PhD, RN, FAAN¹, Xianming Tan, PhD¹, Matthew Nielsen Nielsen, MD, MS², Ronald Chen, MD, MPH², Thomas C Keyserling, MD, MPH³, Christine M. Rini, PhD⁴, Mary Palmer, PhD⁵

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Although prostate cancer treatment with curative intent (surgery or radiation with/without hormone therapy) provides long-term cancer-free survival, survivors experience urinary, sexual, bowel and hormonal symptoms, general distress, pain, fatigue, and sleep disturbance. For men in an intimate relationship, these symptoms disrupt couple's relationships and intimacy, and reduce quality of life (QOL) of both patients and their partners who are often their primary caregivers. Symptom effects may have as great or greater impact on their partners' QOL than on patients' own QOL. Management of the negative effects of cancer and its treatment is a significantly under-addressed supportive care need for these men and their intimate partners. Based on the adapted stress-coping theoretical framework and developed with stakeholder involvement, our interdisciplinary team has developed and pilot tested the usability and feasibility of an evidence-based, couple-focused, tailored mobile health (mHealth) intervention, "Prostate Cancer Education & Resources for Couples" (PERC). We are currently testing the efficacy of PERC using a population-based, geographically and demographically diverse cohort (N=250 patient-partner dyads) in a randomized controlled trial. Our research aims are:

Primary Aim: Assess if patients and partners receiving PERC will report greater improvement in their cancer-related QOL scores than those in the control group (usual care plus the National Cancer Institute (NCI) prostate cancer website) at 4, 8, and 12 months post-baseline.

Secondary Aim: Test if patients and partners in PERC will report significantly more positive appraisals and higher levels of coping resources at follow-ups than those in the control group.

Exploratory Aim: Determine if patient race and ethnicity, education, type of treatment, or couples' relationship quality moderate the effects of PERC on patient and partner QOL at follow-ups. This study will provide a novel model for self-managing chronic illness symptoms that impact couples' relationships, intimacy, and QOL.

3

8:00 AM-9:15 AM

RECOVERING TOGETHER: A FEASIBILITY RCT TO PREVENT CHRONIC EMOTIONAL DISTRESS IN PATIENTS WITH AND THEIR INFORMAL CAREGIVERS ADMITTED FOR AN ACUTE NEUROLOGICAL ILLNESS

Ethan G. Lester, PhD¹, Sarah Bannon, MS², Ryan Mace, MS¹, Melissa V. Gates, BA³, Paula Popok, BA⁴, Sofia Distefano, MS⁴, Danielle Salguiero, RN⁴, Tarah Tehan, MS, MBA, RN⁴, Jonathan Rosand, MD⁵, Ana Maria Vranceanu, PhD⁴

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Admission to the Neuroscience Intensive Care Unit (Neuro-ICU) for an acute neurological illness (ANI; e.g., stroke, tumor, TBI) is prevalent, and often associated with decreased well-being and chronic heightened emotional distress among patients (pts), which lead to slower functional recovery and higher all-cause mortality. The adverse effects of ANIs often ripple out to the emotional functioning of the pts' family caregivers (cgs). Psychosocial research regarding ANIs has traditionally focused on understanding the individual experiences of the pt or the cg *outside* of the context of their interpersonal relationship. For the past 5 years, our research program has provided evidence toward a *dyadic framework* for understanding post-Neuro-ICU distress, in which the pt-cg dyad is viewed as a unit, and an emphasis is placed on the interactions between pt-cg coping and emotional factors and on their interpersonal relationship. Using a mixed methods approach, we developed a manualized dyadic resiliency program ("Recovering Together") focused on teaching dyads resiliency skills (e.g., mindfulness, coping, interpersonal bond) which we found to be protective against the development of chronic depression, anxiety and post-traumatic stress in both pts and cgs. Here we report on a feasibility, proof of concept single blind RCT of Recovering Together against an attention placebo control. Both intervention and control start in the hospital with 2 dyadic sessions at bedside and continue after discharge with 4 dyadic sessions via secure live video. We enrolled 43 complete dyads (86 participants). Of these, 22 were randomized to the intervention and 21 control. One dyad dropped out after randomization (intervention), and two dropped out after completing the two in-hospital sessions (1 intervention and 1 control). Forty dyads provided post-test (20 intervention, 20 control). Feasibility of recruitment was high (~75% of dyads who met study criteria agreed to participate), and adherence to sessions was high and comparable between intervention and control (~80% completed 4 or more sessions). Satisfaction with the program was also high (10.36/12; SD = 1.73). Participants in the intervention reported significant decrease in symptoms of depression, anxiety and PTS between baseline and post-test compared to those in control. We also observe similar improvement in the resiliency factors targeted by the program. Notably, nurses highly endorsed the program and reported low burden of incorporation of study procedures within the Neuro-ICU. Methodological challenges, novel recruitment and retention strategies, and the pivotal role of the partnership with the Neuro-ICU staff, as well as limitations and future directions will be discussed.

Symposium 49

8:00 AM-9:15 AM

PSYCHOLOGICAL, NEUROBIOLOGIC AND FAMILIAL FACTORS THAT SHAPE LONG-TERM OUTCOMES OF CHILDREN WITH CHRONIC PAIN

Susmita Kashikar-Zuck, PhD¹, Caitlin B. Murray, PhD², Laura E. Simons, PhD³, Tonya M. Palermo, PhD⁴

¹Cincinnati Children's Hospital Medical Center, Cincinnati, OH; ²Seattle Children's Research Institute, Seattle, WA; ³Stanford University School of Medicine, Palo Alto, CA; ⁴University of Washington School of Medicine; Seattle Children's Research Institute, Seattle, WA

Pediatric chronic pain is a highly prevalent public health problem. Although evidence-based interventions for the treatment of chronic pain in childhood are available and can be quite beneficial in reducing pain and disability, chronic pain symptoms tend to persist into adulthood for the majority of youth. Recent research has suggested that long-term outcomes can be highly variable in pediatric chronic pain with some patients adapting well over the years with relatively low levels of impairment. Others suffer from increasing pain-related disability over time. More systematic investigation - including prospective longitudinal studies, are needed to understand the biobehavioral predictors of this variability in long-term outcomes of youth with chronic pain. Dr. Murray and Dr. Kashikar-Zuck will discuss results from two separate longitudinal studies in pediatric chronic pain which show converging evidence of the importance of depressive symptoms and familial factors that confer greater risk for poor pain-related outcomes at 6-8 years follow-up. Dr. Kashikar-Zuck will also discuss critical developmental periods in which these risks must be addressed and the potential resilience factors that could be promoted to mitigate the negative impacts of pain into adulthood. Dr. Simons will present new research identifying neurobiologic risk factors that affect responsivity to treatment in pediatric pain as well as screening tools that can be used to adapt treatments to patients' specific needs. Dr. Tonya Palermo, an expert in behavioral intervention research in pediatric chronic pain will provide an overview and lead a discussion about the implications of findings from these studies. In particular, she will focus on how results might be incorporated into designing even more effective treatments and developing tailored treatment strategies for youth with chronic pain.

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1

8:00 AM-9:15 AM

EMERGING EVIDENCE OF PREDICTORS OF LONG-TERM OUTCOMES IN PEDIATRIC CHRONIC PAIN: RESULTS FROM A LONGITUDINAL STUDY OF ADOLESCENTS WITH FIBROMYALGIA

Susmita Kashikar-Zuck, PhD¹¹Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Research has shown that chronic pain in childhood persists into adulthood for the majority of youth. However, there is marked variability in long-term outcomes with regard to the impact of pain on physical and emotional functioning over time. This presentation will focus on results from a longitudinal study of adolescents with juvenile fibromyalgia (JFM) from adolescence ($M_{age} = 15.9$ years) to young adulthood ($M_{age} = 24.2$ years) demonstrating variability in long-term trajectories of outcomes. Over 100 adolescent JFM participants were followed over a period of approximately 8 years with longitudinal assessments of pain, mood symptoms and physical impairment. Initial assessments during the adolescence also included measures of family functioning, psychological comorbidities, and adverse childhood experiences for a subset of participants. Pain was persistent into adulthood, although pain severity tended to decrease over time. Mood symptoms followed distinct trajectories with increasing depressive symptoms over the years being predictive of increasing physical impairment in adulthood. Sub-analyses identified risk factors such as a controlling family environment and early adverse experiences being associated with mood difficulties. The period of emerging adulthood (~19-21 years) appeared to be especially important developmentally, marking a life stage where trajectories tended to become established. A qualitative study with focus groups of adult participants from this cohort is ongoing - examining risk and resilience factors participants' perceive to have influenced their pain and functional outcomes. Results from these interviews will be combined with quantitative results from the prospective longitudinal study to present a more comprehensive and patient-informed view of the developmental course of JFM. Implications for more tailored interventions that target specific risk profiles and promote key resilience factors in youth with chronic pain will be discussed.

2

8:00 AM-9:15 AM

INTRAPERSONAL AND INTERPERSONAL VULNERABILITIES IN ADOLESCENCE THAT AMPLIFY LONG-TERM RISK FOR CHRONIC PAIN IN YOUNG ADULTHOOD.

Caitlin B. Murray, PhD¹, Tonya M. Palermo, PhD²¹Seattle Children's Research Institute, Seattle, WA; ²University of Washington School of Medicine; Seattle Children's Research Institute, Seattle, WA

Introduction: Despite the high likelihood for adolescents with chronic pain to continue to live with pain in adulthood, there is a paucity of research into early vulnerabilities that amplify long-term risk for chronic pain. This study aims to determine intrapersonal (e.g., depression) and interpersonal factors (e.g., protective parenting) in adolescence that may increase risk for continued chronic pain in young adulthood.

Methods: This is a long-term follow-up study of 221 young adults (ages 18-25, 78% female) with a history of adolescent chronic pain who participated in a randomized controlled trial of an internet-delivered pain management program (Palermo et al., 2016) during adolescence. Adolescents were originally recruited from 15 pediatric pain clinics across North America. At baseline, adolescents completed diary measures of pain intensity and disability and measures of depression and anxiety (Bath Adolescent Pain Questionnaire); parents completed measures of protective parenting (Adult Responses to Children's Symptoms) and miscarried helping (Miscarried Helping Scale). At follow-up, 6 years later, young adults reported on chronic pain (defined as pain present at least once per week over the past 3 months). Initial treatment condition, adolescent age, sex, race, and family income were included as covariates.

Results: The majority of the sample (72%) reported continued chronic pain in young adulthood. In logistic regression analyses there were no significant main effects of adolescent pain intensity or disability on young adult chronic pain status. However, significant pain intensity X depression and pain intensity X parent protectiveness interaction effects emerged; post-hoc analyses revealed that adolescent pain intensity predicted increased likelihood for continued chronic pain in young adulthood, but only for those who experienced high levels of co-morbid depression ($b=0.43$ $p=.02$) and protective parenting ($b=0.73$, $p=.03$) in adolescence.

Conclusion: This study has several key findings. The majority (over 70%) of adolescents with chronic pain in this sample report continued chronic pain in young adulthood (6 years later). Moreover, results indicate that emotional vulnerabilities and maladaptive parenting behaviors in adolescence may amplify risk for the persistence and maintenance of chronic pain into adulthood. This study provides key insight into processes that could be targeted in psychosocial interventions to prevent a lifelong trajectory of pain and disability.

3

8:00 AM-9:15 AM

PREDICTING RECOVERY OR PERSISTENCE IN PEDIATRIC PAIN: INNOVATIVE TOOLS AND NOVEL STRATEGIES

Laura E. Simons, PhD¹¹Stanford University School of Medicine, Palo Alto, CA

Up to 5% of adolescents (~3.5 million in the US alone) suffer from high impact chronic pain, affecting all life domains and posing a significant economic burden. Current treatments for chronic pain are suboptimal and have been tied to the opioid crisis. Only ~50% of adolescents with chronic MSK pain who present for multidisciplinary pain treatment recover, as measured by clinical endpoints of pain severity and functional disability. Discovery of robust markers of the recovery vs. persistence of pain and disability is essential to develop more resourceful and patient-specific treatment strategies and to conceive novel approaches that benefit patients who are refractory. Given that chronic pain is a biopsychosocial process, the discovery and validation of a prognostic and robust signature for pain recovery vs. persistence requires measurements across multiple dimensions. This presentation will include introduction of brief screening tools for youth with chronic pain and their parents to rapidly assess risk factors and enhance targeted treatment allocation. Additionally, neurobiological risk factors of brain structure and functional patterns will be presented in relation to responsiveness to treatment in youth with chronic pain. Overall, the presentation will take into account psychosocial and neurobiological factors associated with treatment responsiveness on pain in youth.

Symposium 50

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

RESULTS FROM A RANDOMIZED PREFERENCE TRIAL OF CBT AND YOGA FOR OLDER ADULTS

Gretchen Brenes, PhD¹, Suzanne Danhauer, PhD², Stephanie J. Sohl, PhD¹, Lisa A. Uebelacker, PhD³¹Wake Forest School of Medicine, Winston-Salem, NC; ²Wake Forest School of Medicine, Winston Salem, NC; ³Brown University and Butler Hospital, Providence, RI

Among older adults, anxiety is more common than depression, yet research on the nature and treatment of anxiety and worry has lagged far behind that of depression. Two interventions, cognitive-behavioral therapy (CBT) and yoga, have been shown to decrease worry and anxiety. However, no one has conducted a comparative effectiveness trial of CBT and yoga for treating worry in older adults. The purpose of this study was to compare the effects of two different treatments, CBT and yoga, on worry (PSWQ-A), anxiety (PROMIS-Anxiety) and sleep (ISI) in older (>60 years) adults with high levels of worry (PSWQ-A > 26). Another purpose of this study was to determine if there were participant preference and selection effects on these outcomes. In this randomized preference trial, 500 older adults were randomized to the randomized controlled trial arm (N = 250; 125 in CBT and 125 in Yoga) and the preference arm (N = 250; N = 120 chose CBT and N = 130 chose yoga). The study sample (N=500) had a mean age of 66.5 (SD=5.2) years (86.6% female, 78.8% Caucasian, 53% married/partnered). In this symposium, we discuss the findings of this trial. In the first paper, Dr. Brenes presents the results of the interventions on worry, anxiety, and sleep. While CBT and yoga both resulted in a decline in worry and anxiety, there were no significant differences between the two interventions. However, CBT was superior to yoga in improving sleep outcomes. Further, there were no significant preference nor selection effects for worry, anxiety, and sleep indicating that choice of interventions did not impact the outcomes. In the second paper, Dr. Danhauer presents the results of the interventions on exploratory outcomes including depressive symptoms, generalized anxiety, fatigue, pain, and physical function. Similar to worry and anxiety, symptoms of depression and generalized anxiety declined, but there was no differential effect of the interventions. However, CBT was superior to yoga in reducing pain. Further, there was little change in physical function with either intervention. There were no preference nor selection effects for any of these outcomes. In the final paper, Dr. Sohl discusses how yoga fidelity was established. Yoga class instructors were found to be adherent and competent in their delivery of the intervention. She also discusses how the skills needed for teaching yoga classes for a research study differ from those needed for teaching community classes. The discussant will address lessons learned from a randomized preference trial and how to implement an effectiveness study.

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THE IMPACT OF CBT AND YOGA ON LATE-LIFE WORRY, ANXIETY, AND SLEEP

Gretchen Brenes, PhD¹, Jasmin Divers, PhD², Michael Miller, PhD³, gena Hargis, MPH³, Andrea Anderson, MS³, Suzanne Danhauer, PhD⁴¹Wake Forest School of Medicine, Winston-Salem, NC; ²New York University School of Medicine; ³Wake Forest School of Medicine; ⁴Wake Forest School of Medicine, Winston Salem, NC

Although cognitive-behavioral therapy (CBT) and yoga have been shown to decrease worry and anxiety, no one has conducted a comparative effectiveness trial of the two for treating worry in older adults. The aim of this study was to compare the effects of two interventions, CBT and yoga, on worry (PSWQ-A), anxiety (PROMIS-Anxiety), and sleep (ISI) in older (>60 years) adults. Other aims of this study were to determine participant preference for CBT vs. yoga, and examine participant preference and selection effects on worry, anxiety, and sleep. Five hundred older adults were randomized in a 1:1 two-stage randomized preference trial. Treatment assignment was also 1:1 in the randomized clinical trial (RCT) with 125 older adults in CBT and 125 in yoga. In the preference trial, 120 chose CBT and 130 chose yoga. In the RCT, outcome assessment at week 11 showed significant reductions in the mean PSWQ-A scores in both interventions. The mean PSWQ-A score dropped from 31.7 to 22.9 among participants randomized to CBT for a decline of -8.8 with 95% confidence interval (-10.0, -7.5). Among participants randomized to yoga, the decline was -7.2 (-8.5, -6.0). The overall intervention effect of yoga compared with CBT was 1.6 (-0.2, 3.3), $p=0.08$. Similar results were observed with the PROMIS Anxiety. At week 11, the reduction in means, relative to their baseline values, were -7.5 (-8.8, -6.1) and -7.1 (-8.5, -5.8) for the CBT and yoga arms, respectively. The overall intervention effect on the PROMIS-Anxiety was 0.3 (-1.5, 2.2), $p=0.73$. There were significant differences in the ISI. At week 11, the reduction in means, relative to their baseline values, were -5.4 (-6.3, -4.4) and -3.0 (-3.9, -2.0) for the CBT and yoga arms, respectively. The overall intervention effect on the ISI was 2.4 (1.1, 3.7), $p < 0.01$. Overall, the preference and selection effects for the PSWQA were -1.7 (-5.5, 2.1), $p=0.38$ and -1.1 (-4.9, 2.7), $p=0.57$, respectively; for the PROMIS-Anxiety they were -0.5 (-5.1, 4.2), $p=0.84$ and 0.2 (-4.4, 4.9), $p=0.92$, respectively; and for the ISI they were -1.1 (-5.0, 2.7), $p=0.57$ and -1.1 (-4.9, 2.8), $p=0.59$, respectively. Both CBT and yoga produced declines in worry and anxiety symptoms, with no significant differences between the two interventions. However, CBT was superior to yoga in improving sleep outcomes. Further, there were no significant preference or selection effects for worry, anxiety, and sleep.

2

8:00 AM-9:15 AM

A RANDOMIZED PREFERENCE TRIAL COMPARING COGNITIVE-BEHAVIORAL THERAPY (CBT) AND YOGA FOR THE TREATMENT OF LATE-LIFE WORRY: EXAMINATION OF ADDITIONAL OUTCOMES

Suzanne Danhauer, PhD¹, Michael Miller, PhD², Jasmin Divers, PhD³, gena Hargis, MPH², Andrea Anderson, MS², Gretchen Brenes, PhD⁴

¹Wake Forest School of Medicine, Winston Salem, NC; ²Wake Forest School of Medicine; ³New York University School of Medicine; ⁴Wake Forest School of Medicine, Winston-Salem, NC

The purposes of these analyses were to determine and compare the effects of CBT and yoga on depression, generalized anxiety, fatigue, physical function, and pain; and to determine if there are preference and selection effects for these treatments. In this randomized preference trial, participants were randomized to: (1) a randomized controlled trial (RCT) of CBT or yoga (n=250); or (2) a preference trial in which they select their treatment (CBT or yoga; n=250). Exploratory outcomes included self-reported depressive symptoms (PROMIS depression), generalized anxiety symptoms (GAD-7), fatigue (PROMIS fatigue), pain (PROMIS pain interference and intensity), and physical function (PROMIS physical function) measured at baseline and post-intervention (Week 11). In the RCT, depressive symptoms, generalized anxiety, and fatigue declined in both groups (no significant differences between CBT or yoga groups). The intervention effect (difference of change between intervention groups) on depressive symptoms was 0.5 (95% CI: -1.6, 2.6) greater improvement in CBT, $p=0.65$. Similar patterns were noted for fatigue [intervention effect was 1.0 (-1.2, 3.2), $p=0.37$] and generalized anxiety symptoms [intervention effect was 0.7 (-0.03, 1.8), $p=.17$]. There were significant between-group differences for both pain interference and intensity. The mean pain interference score dropped from 53.5 to 50.9 among participants randomized to CBT for a difference of -2.6 (-4.1, -1.0). Among participants randomized to yoga, the difference was -0.1 (-1.7, 1.4), resulting in an intervention effect of 2.4 (0.3, 4.5), $p=0.02$. The mean pain intensity score dropped from 3.1 to 2.8 among participants randomized to CBT for a difference of -0.04 (0.8, 0.0). Among participants randomized to yoga, the average score increased by 0.3 (-0.1, 0.7), resulting in an intervention effect of 0.7 (0.2, 1.2), $p<0.01$. There was no change in physical function for either group and no significant between-group difference was noted ($p=0.14$). No preference or selection effects were found for any of these outcomes. Both CBT and yoga produced improvements in depressive symptoms, generalized anxiety symptoms, and fatigue. The CBT group showed greater improvements in both pain interference and intensity compared with the yoga group. Both CBT and yoga may be useful for older adults for improving psychological symptoms and fatigue. CBT may offer even greater benefit than yoga for decreasing pain.

3

8:00 AM-9:15 AM

ENSURING YOGA INTERVENTION FIDELITY IN A RANDOMIZED PREFERENCE TRIAL FOR THE TREATMENT OF WORRY IN ANXIOUS OLDER ADULTS

Stephanie J. Sohl, PhD¹, Gretchen Brenes, PhD¹, gena Hargis, MPH², carol Krucoff, C-IAYT, E-RYT 500³, Suzanne Danhauer, PhD⁴

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Yoga is an important option to evaluate for the treatment of worry in anxious older adults because yoga is an intervention that is likely to translate into real-world practice. Assessing treatment fidelity when translating interventions to real-world settings allows researchers to determine if any null results for effectiveness of the intervention are because the intervention did not work or if it was not implemented as intended. This study focused on establishing treatment fidelity of a yoga intervention implemented in a randomized preference trial that compared the effectiveness of cognitive-behavioral therapy (CBT) and yoga for the treatment of worry, anxiety, and sleep in worried older (≥ 60 years) adults. Established methods for assessing treatment fidelity of CBT guided our methods for ensuring that the yoga intervention was robust and delivered as intended. The yoga intervention consisted of 20, 75-minute in person group gentle yoga classes held twice weekly. Instructors were trained in the Relax into Yoga approach designed for older adults. We adapted a measure developed for use with CBT that assessed adherence to the treatment manual (0=no adherence to 8=optimal adherence) and teaching competency (0=none to 8=excellent). We calculated the average instructor adherence and competency scores, variability in scores over time, and frequency that additional skills not included in the protocol were taught (yes/no). We also qualitatively summarized topics reviewed with instructors to enhance fidelity. Six female instructors (mean age=64 years) taught 660 yoga classes that were videotaped over the study period (May 2017- February 2019). Ten percent of these classes (n=66) were randomly selected for review. The average adherence score for yoga instructors was 6.84 (range 4-8), which increased over time. The average competency scores were consistently high with an average score of 7.24 (range 6-8). Teaching content not in the protocol occurred in 26 (38.1%) of the sessions and decreased over time. The higher variability in adherence versus competence scores demonstrated that teaching a yoga class according to a protocol requires different skills from competently teaching a yoga class in the community and that such skills improved with feedback. These results may foster dialogue between the research and yoga practice communities by providing insight into the hiring, study management, and training practices needed to support optimal intervention fidelity.

Symposium 51

8:00 AM-9:15 AM

1

8:00 AM-9:15 AM

PROMOTING PREVENTIVE CARE TO ELIMINATE DIABETES DISPARITIES AND ACHIEVE POPULATION HEALTH IMPACT

Susan D. Brown, PhD¹, Obidiugwu K. Duru, MD, MS², Pamela L. Thornton, PhD³, Phoutdavone Phimphasone-Brady, PhD⁴, Alicia Fernandez, MD⁵¹Kaiser Permanente Northern California, Oakland, CA; ²UCLA, Los Angeles, CA; ³National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD; ⁴University of Colorado Anschutz Medical Campus, Aurora, CO; ⁵University of California, San Francisco, San Francisco, CA

The goal of this symposium is to expand the national conversation about eliminating population health disparities in diabetes through the equitable provision and uptake of preventive healthcare services. Adults from racial/ethnic minority and low-income backgrounds face disproportionate burdens of type 2 diabetes and diabetes complications. Low patient engagement in guideline-recommended preventive services, such as diabetes screening and behavioral weight management programs, exacerbate these inequities. In this symposium, presenters will a) examine evidence on disparities in healthcare services to prevent diabetes and its complications and b) identify innovative strategies to increase patient engagement in preventive services. The first presenter will discuss the National Institutes of Health 2019 Pathways to Prevention Workshop, which identified research gaps and priorities for engaging underserved and at-risk populations in guideline-recommended diabetes preventive care. The second presenter will discuss a shared decision making intervention to promote uptake of evidence-based diabetes prevention (i.e., medication and/or the Diabetes Prevention Program for lifestyle behavior change and weight management) among racially/ethnically diverse patients with prediabetes; a key focus of this work is to promote equity in weight loss and other clinical outcomes. The third presenter will provide key findings of a qualitative study examining barriers to participation in the National Diabetes Prevention Program within a safety net healthcare system. The fourth presenter will discuss the rationale and development of an outreach intervention to increase uptake of guideline-recommended postpartum diabetes screening among women with gestational diabetes, who face high lifetime risk for type 2 diabetes. Finally, the Discussant will summarize and critique the current research, with a focus on accelerating interventions to promote preventive care and eliminate downstream health disparities in diabetes.

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PROMOTING EQUITABLE UPTAKE OF POSTPARTUM DIABETES SCREENING: RATIONALE AND DEVELOPMENT OF AN OUTREACH INTERVENTION

Susan D. Brown, PhD¹, Mara Greenberg, MD², Ai-Lin Tsai, MS¹, Charles Quesenberry, PhD³, Jenna Ritchie, BA³, Assiamira Ferrara, MD, PhD⁴¹Kaiser Permanente Northern California, Oakland, CA; ²The Permanente Medical Group; ³Kaiser Permanente Northern California; ⁴Division of Research, Oakland, CA

Gestational diabetes mellitus (GDM) is a common pregnancy complication that elevates women's lifetime risk for type 2 diabetes. Clinical guidelines thus recommend an oral glucose tolerance test to screen for diabetes at 4-12 weeks postpartum—screening which is now a covered benefit under the Affordable Care Act. Yet screening uptake remains suboptimal and uneven across racial/ethnic groups, delaying diabetes prevention and early treatment. Uptake is lowest among African Americans, who face higher risk for progression to type 2 diabetes after GDM as compared to other racial/ethnic groups. Here we describe the rationale and design of intervention research, in partnership with clinical leaders in a large integrated health system, to promote guideline-recommended postpartum diabetes screening among diverse women with GDM. In the first study, results suggest that a focus on risk communication may be warranted. Among women identified with GDM in a 1-year period (N=1,614; 2011-2012), we classified risk for type 2 diabetes according to an American Diabetes Association algorithm of factors assessed via electronic health records and a self-report survey. Only 41% of those at “increased risk” completed guideline-recommended screening (n=121/297) vs. 55% of those not at increased risk (n=725/1,317; p<.0001). In a logistic regression accounting for race/ethnicity and other demographic and clinical factors, those at increased risk had 25% lower odds of completing screening than those not at increased risk (odds ratio 0.75, CI 0.58-0.96). The second study is a factorial experiment in a largely minority sample to pilot the feasibility and acceptability of a multi-component outreach intervention. At the health system level, it seeks to build upon existing population health strategies (e.g., ordering screening tests for all eligible patients and systematic patient reminders). At the patient level, it focuses on risk communication and motivations to engage in preventive care in the demanding postpartum period. Some intervention components were previously piloted among English- and Spanish-speaking African American and Latina women with a history of GDM. Results will be used to refine the intervention for future research. Targeting patient-level factors while leveraging resources at the health system level may be a promising approach to promote equitable uptake of guideline-recommended postpartum diabetes screening among diverse women at high risk for type 2 diabetes.

2

8:00 AM-9:15 AM

SHARED DECISION MAKING IN DIABETES PREVENTION: WORKING TOWARD RACIAL EQUITY IN KEY PATIENT OUTCOMES

Obidiugwu K. Duru, MD, MS¹, Tannaz Moin, MD, MBA, MSHS¹, Norman Turk, MS², Amanda Vu, PharmD², Dominick Frosch, PhD³, Kia Skrine Jeffers, PhD, RN⁴, Yelba Castellon-Lopez, MD⁵, Chi-Hong Tseng, PhD², Keith Norris, MD, PhD², Carol Mangione, MD, MSPH²

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More than 84 million Americans are at risk for diabetes, and incidence rates are rising more quickly among African Americans and Latinos. The Diabetes Prevention Program (DPP) trial showed that both metformin and lifestyle change can help prevent diabetes, but results from the real-world National Diabetes Prevention Program indicate that minority participants may lose less weight than white participants. A potential patient-centered strategy to enhance clinical outcomes in diabetes prevention is for patients and healthcare providers to work together in a shared decision making (SDM) approach, to decide which strategy best aligns with patient risk as well as the patient's needs and preferences. Our research team conducted a cluster-randomized trial of SDM led by clinical pharmacists in 20 primary care practices in a large healthcare system, enrolling a multi-racial sample. The pharmacists used an online decision aid to help patients choose a diabetes prevention strategy. We found that in an intention-to-treat analysis, patients with prediabetes who engaged in SDM (n=515) were more likely than matched controls with prediabetes (n=1,526) to take up evidence-based diabetes prevention, defined as either attending DPP sessions and/or starting metformin as reported during a clinic visit (32.8% vs. 2.5%, $p < 0.001$). Examining uptake within the intervention sample by racial/ethnic group, we found similar rates by racial/ethnic group (uptake of 34% for whites, 28% for African Americans, 40% for Latinos and 28% for Asian Americans, $p = \text{NS}$ for pair-wise comparisons for each minority group compared to whites). Overall, participants in the intervention lost more weight than controls (-4.7 lbs. vs. -0.4 lbs., $p < .001$). However, there were significant differences in weight loss by racial/ethnic group within the intervention, as white participants (-6.6 lbs) lost more weight than African American participants (-1.8 lbs, $p = .002$ vs. whites) and Latino participants (-3.1 lbs, $p = 0.017$ vs. whites). These differences persisted after controlling for age, clinic and a zip code-level measure of income. We are currently scaling up this protocol for all eligible patients in 40 clinics across two health systems with funding from the Patient-Centered Outcome Research Institute (PCORI). A key goal of this next phase of our work is to achieve health equity in weight loss and other clinical outcomes by adding modifications to the intervention approach based on patient and clinician feedback.

3

8:00 AM-9:15 AM

ACHIEVING HEALTH EQUITY IN PREVENTIVE SERVICES: INSIGHTS FROM AN NIH WORKSHOP

Pamela L. Thornton, PhD¹, Richard Berzon, DrPH, PA², Melissa C. Green Parker, Ph.D.³, Carrie Klabunde, Ph.D., MBA, MHS⁴, Antoinette Percy-Laurry, DrPH, MSPH⁵, LeShawndra Price, PhD⁶, Kate Winseck, MSW⁷, Xinzhi Zhang, MD, PhD⁸

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Background: Evidence-based guidelines for preventive services are developed by expert groups such as the U.S. Preventive Services Task Force (USPSTF) to help Americans stay healthy. Despite the proven value of many evidence-based preventive services, implementation by providers and uptake by patients vary, contributing to disparities in disease burden and life expectancy. The NIH convened a workshop with multidisciplinary and multisector participants in June 2019 to assess the available scientific evidence on achieving health equity in the use of clinical preventive services for three leading causes of death: diabetes, heart disease, and cancer.

Methods: The workshop focused on 5 key questions (KQs), and included a systematic evidence review, speaker presentations, and public discussion. KQ 1-2 considered the effects of barriers on the part of providers and patients to adopting and implementing evidence-based preventive services, and how they contribute to health disparities. KQ 3-5 addressed the effectiveness of health information technology and health care organization interventions to reduce disparities in preventive services use. An unbiased, independent panel of experts prepared a report of findings for addressing disparities in the use of 10 clinical preventive services recommended by the USPSTF. Findings: Findings of the report included the need for more research on the effects of barriers to the adoption of clinical preventive services, strategies for bundling preventive services and implementing Health IT, and the integration of social and medical care. The recommendations along with implementation examples will be discussed.

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8:00 AM-9:15 AM

REPORT FROM THE FIELD: PERCEIVED BARRIERS AND POTENTIAL SOLUTIONS TO ENGAGEMENT FOR THE UNDESERVED IN THE NATIONAL DIABETES PREVENTION PROGRAM

Phoutdavone Phimphasone-Brady, PhD¹, Natalie Ritchie, PhD², Katherine Sauder, PhD³, Claudia Amura, PhD⁴

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The National Diabetes Prevention Program (NDPP) has achieved wide-scale dissemination, yet effort is needed to reduce racial/ethnic and socioeconomic disparities in outcomes. Poor attendance in the yearlong program is a major concern, especially in under-resourced communities. Strategies to improve engagement appear needed to both increase weight loss and support sustainability under current performance-based reimbursement models. In this qualitative study, we evaluated type and frequency of perceived barriers among 225 enrollees in a safety net healthcare system in 2018. Nearly all enrollees anticipated at least one barrier to engagement (92.9%), of whom 37.3% anticipated multiple barriers ($M = 2.39$; $SD = 0.56$). Main themes of barriers were 1) challenges with scheduling and planning (reported by 61.3% of enrollees), 2) challenges traveling to/from NDPP classes (30.2%), 3) challenges with health behavior change (25.3%), and 4) challenges due to other health conditions (18.7%). The NDPP has achieved wide-scale dissemination and optimization is now needed to reduce diabetes and related disparities. Assessing anticipated barriers to NDPP engagement may be important at enrollment, in addition to re-assessing actual barriers upon attendance. NDPP delivery may require tailoring based on individual need, such as offering childcare or transportation support, and adaptation to meet more general population needs, such as adopting policies supporting virtual delivery.

Friday April 3rd, 2020 10:45 AM-11:45 AM

MERITORIOUS AWARD WINNER

Paper Session 26 10:45 AM-11:00 AM

LUNG CANCER STIGMA: DOES SMOKING HISTORY MATTER?

Timothy J. Williamson, Ph.D., MPH¹, Diana M. Kwon, BA², Kristen E. Riley, Ph.D.³, Megan Shen, PhD⁴, Heidi Hamann, PhD⁵, Jamie Ostroff, PhD¹

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Background: Most lung cancer patients (95%) report experiences of stigma, which are associated with adverse psychological and physical health outcomes. Theory and research suggest that patients' history of smoking may differentiate patients' experience of stigma. However, there is inconsistent evidence as to whether stigma varies by smoking history, owing to limitations in the literature, including: 1) low enrollment of participants who currently smoke; 2) use of stigma measures that vary across studies regarding their psychometric properties; and 3) omission of important covariates.

Purpose: This study tested differences in levels of lung cancer stigma by patients' history of smoking.

Method: Participants (N=266, 63.9% female) were men and women with lung cancer who completed validated questionnaires. Addressing previous study limitations, this study used a lung cancer stigma measure that incorporated patient feedback and evidenced strong psychometric properties, recruited a relatively large subsample of participants who currently smoke (n=49), and included depressive symptoms and sociodemographic characteristics as covariates. Multivariable regression models characterized relationships between smoking history (currently, formerly, never smoked) and lung cancer stigma.

Results: Clinically meaningful lung cancer stigma was experienced by the majority of participants who currently (93.9%), formerly (85.4%), and never smoked (60.0%). Participants who currently smoked reported significantly higher total, internalized, and perceived lung cancer stigma, compared to those who formerly or never smoked (all $p < .05$). Additionally, participants who formerly smoked reported significantly higher total and internalized stigma, compared to those who never smoked ($p < .001$). Participants reported similar levels of constrained disclosure (discomfort in sharing their disease status with others), regardless of smoking history ($p = .630$).

Conclusions: Lung cancer stigma is experienced by most patients, particularly among (but not limited to) those who currently smoked. Patients' constrained disclosure is a pervasive aspect of lung cancer stigma across smoking history groups. Most lung cancer patients may benefit from psychosocial support to address stigma (particularly around constrained disclosure). Additionally, lung cancer patients who smoke at diagnosis might be identified for additional support that aims to reduce internalized stigma and promote engagement with smoking cessation interventions.

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Paper Session 26

11:00 AM-11:15 AM

CORRELATES OF SUN PROTECTION BEHAVIORS AMONG ADULTS IN PUERTO RICO

Zhaomeng Niu, PhD¹, Carolina I. Lozada, MPH², Carolyn Heckman, PhD², Elliot J. Coups, PhD³

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Introduction: The incidence of skin cancer has been increasing in Puerto Rico in recent years. Approximately 99% of the Puerto Rican population is Hispanic. Hispanic individuals in the United States do not sufficiently engage in sun protection behaviors, which can reduce the risk of skin cancer. However, there are limited data regarding factors associated with Puerto Rican adults' sun protection behaviors.

Methods: A population-based sample of 667 Puerto Rican adults (47.7% response rate; M age = 48.5 years; 61% female) completed a telephone survey. An index of sun protection behaviors was created by averaging participants' responses to questions about their frequency of using sunscreen, staying in the shade, and wearing wide-brimmed hats and long-sleeved shirts. Further survey items addressed potential correlates of sun protection behaviors, including variables in the following categories: demographics; social influence factors; sun protection attitudes; skin cancer risk factors; and knowledge and attitudes about skin cancer. Multivariable regression analyses examining correlates of the sun protection behaviors index were conducted separately for each category of variables.

Results: Higher levels of sun protection behaviors were found among English language acculturated compared to Spanish language acculturated individuals ($p < .05$) and among individuals with private versus public health insurance ($p < .001$). Among the social influence variables, having talked with a doctor about sun protection ($p < .001$) and sun protection norms ($p < .01$) were positively associated with sun protection behaviors. In terms of sun protection attitudes, higher levels of sun protection behaviors were found among participants with fewer sun protection barriers ($p < .01$), greater sun protection self-efficacy ($p < .001$), and greater photo-aging concerns ($p < .05$). Individuals with a greater number of skin cancer risk factors reported engaging in more sun protection behaviors ($p < .001$). For the skin cancer knowledge and attitudes category, higher levels of sun protection behaviors were found among individuals with greater skin cancer knowledge ($p < .001$) as well as higher perceived skin cancer risk ($p < .01$) and worry ($p < .05$).

Conclusions: By identifying correlates of Puerto Rican adults' sun protection behaviors, this timely study provides insight on potential subgroups and factors to target in future skin cancer prevention interventions in this understudied population.

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Paper Session 26

11:15 AM-11:30 AM

RACE/ETHNICITY AND CANCER INFORMATION SEEKING: EVIDENCE FROM A NATIONALLY REPRESENTATIVE SAMPLE

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Introduction: Cancer is the second leading cause of death in the United States, with smoking being its leading cause. Despite decreases in smoking and cancer mortality overall, rural populations continue to have a higher prevalence and slower reduction of cancer death rates. As a preventive approach to combat cancer, the National Cancer Institute continues to prioritize providing the public with health information. Yet, little is known about cancer information seeking among smokers in rural America—even less how this varies by race/ethnicity.

Methods: Using data from two iterations of the Health Information National Trends Survey (HINTS 4 and HINTS 5) we analyze the odds of looking for information about cancer by smoking status and rurality. We tested for the interaction of race/ethnicity to see if the association between smoking status and information-seeking differs for Whites and non-Whites in both rural and urban areas. Using an established social determinants framework, a series of logistic regression models were fitted to estimate odds ratios (OR) and 95% confidence intervals (CIs).

Results: Smokers were less likely to seek cancer information compared to non-smokers, with those living in rural areas having lower odds compared to urban dwellers. Non-White smokers had lower odds of seeking cancer information compared to White smokers. Additionally, non-Whites in rural areas are less likely to seek cancer information than Whites in rural areas.

Conclusions: In this study, compared to urban-dwellers, smokers living in rural areas have lower odds of seeking cancer information. This relationship was worse for ethnic minorities. Understanding this relationship between race, place, and cancer information-seeking has implication for the allocation of resources and the design of interventions aimed at increasing information about cancer.

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Paper Session 26

11:30 AM-11:45 AM

CULTURALLY-TARGETED MESSAGE-FRAMING AND RECEPTIVITY TO COLORECTAL CANCER SCREENING AMONG AFRICAN-AMERICANS

Todd Lucas, PhD¹, Hayley S. Thompson, Ph.D.², Louis A. Penner, PhD³, Mark Manning, Ph.D.⁴¹Michigan State University, Flint, MI; ²Karmanos Cancer Institute - Wayne State University, Detroit, MI; ³Wayne State University/Karmanos Cancer Institute, Detroit, MI; ⁴Karmanos Cancer Institute, Detroit, MI

Background: In the United States, African Americans have the highest colorectal cancer (CRC) incidence and death rate of any ethnic group, with lower rates of CRC screening playing a critical role. Identifying health communication strategies that effectively reduce screening disparities may be vital. Building on recent research, this study further examines use of gain and loss-framed messaging to compel African Americans to participate in recommended CRC screening, and whether culturally targeted personal prevention messaging can be added to framing to augment receptivity to CRC screening.

Objective: To examine 1) simultaneous use of messaging-framing and culturally-targeted personal prevention messaging to compel African Americans to participate in recommended CRC screening; 2) arousal of perceived racism in response to message framing and personal prevention messaging strategies.

Methods: CRC screening deficient African Americans ($n = 429$) watched a brief online tutorial about CRC risks, prevention and screening, and were either randomly assigned to view either a gain-framed or loss-framed message about CRC screening. Half of African Americans were exposed to an additional and culturally-targeted personal prevention message. Theory of Planned Behavior measures of attitudes, normative beliefs, perceived behavioral control, and intentions to obtain CRC screening served as outcomes. The effect of messaging on perceived racism in completing CRC screening was also measured as an outcome.

Results: Contrary to theoretical predictions, but consistent with recent cross-cultural research, African Americans were more receptive to CRC screening when exposed to a gain rather than loss-framed message. The contrary effect of loss-framed messaging on receptivity to screening among African Americans was mediated by an increase in perceived racism. However, including an additional and culturally targeted prevention message mitigated the adverse effect of a loss-framed message on both perceived racism and receptivity to CRC screening.

Conclusion: This study further supports a recently identified cultural difference in the effect of message framing on cancer screening among African Americans, while further corroborating a culturally relevant linking mechanism. This study also suggests developing culturally-targeted versions of general health communication strategies may be most compelling in addressing racial health disparities stemming from behavioral prevention, including CRC screening.

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MERITORIOUS AWARD WINNER

Paper Session 27

10:45 AM-11:00 AM

DEVELOPMENT AND ACCEPTABILITY OF AN EDUCATIONAL SMOKING CESSATION VIDEO FOR USE IN OUTPATIENT MENTAL HEALTHCARE IN LOUISIANA

Laura M. Perry, MS¹, Adina S. Kazan, B.S.², Wasef Atiya, n/a³, Seowoo Kim, n/a¹, Hallie M. Voss, n/a⁴, Hannah Mercorella, BS⁵, Sanjana Easwar, N/A², James L. Rogers, N/A⁶, Ashley Lewson, BS⁷, Michael Hoerger, PhD, MSCR¹

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Background: Tobacco use is a leading preventable risk factor for early mortality and is prevalent among adults with mental health diagnoses in Louisiana. However, many available resources do not target individuals most receptive to changing their behavior. We aimed to develop and test the acceptability of a video intervention for outpatient mental healthcare settings designed to increase utilization of the Louisiana Tobacco Quitline among “ready to quit” smokers (in the “preparation” stage of the Stages of Change model).

Methods: A secondary analysis of the 2016 Louisiana Adult Tobacco Survey was conducted to characterize the demographics and smoking behaviors of Louisiana smokers who indicated they were “ready to quit” (expressed a desire to quit and had a quit attempt in the past year). These results informed the development of an educational video, in conjunction with iterative feedback from four stakeholder advisory board meetings. Stakeholders included current smokers, mental health clinicians, and public health advocates. After the last meeting, our stakeholder advisory board ($n=10$) and external stakeholders ($n=20$) rated a 6-item summative evaluation on a 5-point Likert scale to assess the acceptability of the final video.

Results: Our analysis found that ready to quit smokers in Louisiana (52.3% female, 60.2% White, 13.3% college-educated) were more likely than non-ready to quit smokers to use menthol cigarettes (48.3% vs. 38.4%, $p<.001$) or e-cigarettes/vaping devices (14.2% vs. 9.6%, $p=.030$), and bought cigarettes in smaller quantities ($p<.001$). This study ended in a 2-minute video that provides information about the Louisiana Tobacco Quitline. The video was found highly acceptable by stakeholders, as 96.7% felt the video was both helpful ($M=4.50$, $SD=0.57$) and engaging ($M=4.53$, $SD=0.57$). Stakeholders also felt that they would recommend others use the quitline ($M=4.17$, $SD=0.91$) and watch the video ($M=4.27$, $SD=0.87$). Those who participated in the advisory board felt that their ideas were heard ($M=4.80$, $SD=0.42$) and enjoyed participating ($M=5.00$, $SD=0.00$).

Conclusions: This study demonstrates the acceptability of combining theory and iterative stakeholder feedback to develop an mHealth video that links the target population with a tobacco quitline. Follow-up studies should assess the feasibility of implementing the intervention in outpatient mental healthcare and its effectiveness for increasing quitline utilization and tobacco cessation.

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CITATION AWARD WINNER

Paper Session 27

11:00 AM-11:15 AM

EFFECT OF EXPOSURE TO AN ANTI-VAPE MASS MEDIA CAMPAIGN ON VAPING KNOWLEDGE AND INTENTIONS

Alexa R. Romberg, PhD¹, Morgane Bennett, DrPH(c), MPH¹, Bethany Simard, MPH¹, Shreya Tulsiani, MPH¹, Elizabeth C. Hair, PhD¹, Donna Vallone, PhD, MPH¹

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Mass media campaigns are effective tobacco prevention tools. With the dramatic increase in the prevalence of youth e-cigarette use in recent years, the national, counter-tobacco truth® campaign shifted the focus of campaign messages from prevention of combustible tobacco use to prevention of e-cigarette use. This study assessed differences in vaping-related knowledge and intentions between those who were exposed to truth’s anti-vaping digital ads and those who were not.

Participants ($N=815$, age 18-34) were Dynata panel members. Those who were served a truth ad as part of their natural web activity were randomly selected to receive an online survey. A matched control group that had not been exposed to the digital campaign was also recruited.

The survey assessed vape-related knowledge that was included in truth ads: “Vaping makes people more likely to try cigarettes” (try cigs) and “vapes/e-cigarettes have as much or more nicotine as cigarettes” (nicotine) on a 4-point agreement scale. Participants also reported intentions to use an e-cigarette in the future, with response options definitely not, probably not, probably yes, and definitely yes. Those who responded with anything except definitely not were coded as intending to vape.

Those in the exposed group had, on average, significantly higher agreement with the “try cigs” ($M(\text{exposed})=2.4$; $M(\text{control})=2.1$, $p<.01$) and “nicotine” ($M(\text{exposed})=2.7$, $M(\text{control})=2.5$, $p<.01$) knowledge items compared to the control group. These differences remained significant in regression models when controlling for covariates ($b(\text{try cigs})=0.20$, $p<.01$; $b(\text{nicotine})=0.19$, $p<.05$). There were no significant differences in the proportion of participants who intended to vape between the two groups (exposed=62.9%, control=65.0%, $p=0.5$). Additional regression models indicated that those participants with greater agreement with the “try cigs” knowledge item had lower odds of intending to vape ($OR=0.69$, $p<.001$). The association between the “nicotine” knowledge item and intentions to vape was not significant ($p=.07$).

The ultimate goal of mass media campaigns, like truth, is to change behavior, a precursor to changes in knowledge and intentions to perform that behavior. Results suggest the truth anti-vape campaign was effective at communicating facts and that knowledge was associated with lower intentions to vape. Future evaluations will determine whether ongoing campaign exposure successfully reduces vaping behavior.

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Paper Session 27

11:15 AM–11:30 AM

DROPOUT, RESPONSE, AND ABSTINENCE OUTCOMES OF A NATIONAL TEXT-MESSAGING SMOKING CESSATION INTERVENTION FOR TEENS, SFTEEN

Charmaine Chan, BA¹, Kristyn Kamke, PhD, MS¹, Sherine El-Toukhy, PhD, MA¹¹National Institutes of Health, Bethesda, MD

Background: Adolescence marks cigarette smoking initiation for 90% of US adult smokers. Although text messaging interventions are effective for smoking cessation in adults, few exclusively target teens in the United States and little is known about their effectiveness.

Purpose: Examine correlates of dropout, response rates to smoking-status prompts, and abstinence among SmokeFreeTeen subscribers on quit day through one-month follow-up. These correlates included demographics, smoking frequency, cigarettes smoked per day, pre-quit intervention time (i.e., maximum of 14 days of pre-quit day preparation), and number of quit attempts.

Methods: We performed logistic regressions on a sample of teens, aged 13–19, who subscribed to SmokeFreeTeen ($n = 2685$), a free, publicly available text messaging smoking cessation intervention sponsored by the National Cancer Institute's SmokeFree.Gov initiative.

Results: Two thirds of subscribers ($n = 1733$, 64.5%) dropped out before intervention end, with dropout rates peaking on quit day at 13.1%. Response rate to smoking-status prompts remained below 30% throughout the intervention. Abstinence was 2.7% at intervention end and 2.6% at one-month post-quit. Dropout, response rate, and abstinence did not differ by subscriber characteristics. Among those who dropped out of the intervention, time from quit day to dropout averaged 8 days. Pre-quit time was associated with decreased likelihood of dropping out (adjusted odds ratio [aOR] 0.91, 95% CI 0.90–0.93), responding to smoking-status prompts (aOR 0.94, CI 0.92–0.96), and being abstinent on quit day (aOR 0.96, CI 0.93–0.99). Those with two or more quit attempts were more likely to respond (aOR: 1.79, 1.61) on quit day and day 7 and to be abstinent on day 7 (aOR: 1.92) than those who attempted to quit only once.

Conclusions: In a first assessment of SmokeFreeTeen outcomes, we document high dropouts and low response and abstinence rates. SmokeFreeTeen produced abstinence rates lower than comparable text-messaging interventions targeting teens and young adults. Improving SmokeFreeTeen's reach, engagement, and effectiveness is needed to reduce teen smoking.

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Paper Session 27

11:30 AM–11:45 AM

THE EFFECTS OF INTERMITTENT COACHING WITHIN A SECOND-HAND SMOKE JUST-IN-TIME ADAPTIVE INTERVENTION

Vincent Berardi, PhD¹, Melbourne Hovell, MA, Ph.D. MPH², Ehsan Yaghmaei, PhD Candidate³¹Chapman University, Long Beach, CA; ²School of Public Health SDSU, Jamul, CA; ³Chapman, Pasadena, CA

Background: Indoor smoking generates fine particulate matter, which poses severe health risks, particularly for children. In a recently completed just-in-time adaptive intervention (JITAI), we demonstrated that indoor particulate matter was reduced via the immediate presentation of aversive feedback in response to indoor smoking and other particle-generating behaviors. During the deployment of the measurement/feedback system, participants also received four in-home coaching sessions. The independent effects of each of these coaching sessions on indoor particulate matter has not yet been determined.

Methods: We recruited 149 predominately low-income households that contained at least one adult smoker and at least one child aged < 14 years. In each home, two Dylos air particle monitors were installed for ~3 months and measured indoor air particle concentrations every ten seconds. After an ~2 week Baseline period where indoor air concentrations were passively recorded, monitors began delivering aversive visual/auditory feedback in response to the exceedance of a particle concentration threshold that was consistent with cigarette smoking. At four different occasions in the study, RAs performed motivational interviewing coaching sessions where they provided participants with a detailed visual summary of air particle concentrations over the previous weeks and discussed particle sources, mitigation efforts, and goals for upcoming weeks. The first coaching session corresponded with the activation of the aversive feedback system at the end of the Baseline, while the three others occurred at roughly two-week intervals. To assess the effect of the coaching sessions on air particle levels, an interrupted time-series, random-intercept hierarchical linear model was constructed. Within this model, time was rescaled on an individual basis so that each of the four coaching visits were temporally aligned over all participants.

Results: As expected, relative to the Baseline, air particle levels were significantly lower ($p=0.001$) after the first coaching visit, which corresponded with the onset of real-time feedback. Air particle levels were also significantly lower ($p < 0.001$) after the third coaching session, relative to the time period immediately preceding it. The reduction in air particle concentrations associated with the third coaching visit was larger than that of the first. The second and fourth coaching visits had no effect on air particle levels.

Discussion: The impact of the third coaching session on air particle levels was completely unexpected and may be associated with a slow buildup of intervention effect. Based on this result, audio recordings of all coaching sessions are being transposed so that a qualitative analysis of coaching visits can be performed.

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Paper Session 28

10:45 AM–11:00 AM

IMPLEMENTATION OUTCOMES OF WEBMAP MOBILE: AN MHEALTH SOLUTION FOR PEDIATRIC CHRONIC PAIN

Rocio de la Vega, PhD¹, Tonya M. Palermo, PhD², Lee M. Ritterband, PhD³¹Seattle Children's Research Institute, Seattle, WA; ²University of Washington School of Medicine; Seattle Children's Research Institute, Seattle, WA; ³University of Virginia School of Medicine, Charlottesville, VA

Introduction: Chronic pain is common in adolescents, affecting one in four. Behaviorally based treatments are effective for reducing pain and disability; however, access is limited. Remotely-delivered pain self-management programs, which have also been found to be efficacious, can reduce barriers to care. The current work aims to evaluate the implementation strategy for a smartphone application for adolescents with chronic pain called WebMAP Mobile.

Methods: We conducted a hybrid effectiveness-implementation cluster randomized controlled trial with a stepped wedge design in which the intervention was sequentially implemented in 9 specialty clinics, following a usual care period. Participants were 173 youth (mean age 14.5, 82% female) with chronic pain, from which 73 were randomized to receive WebMAP Mobile and are analyzed here. Implementation outcomes were assessed with the Behavior Interventions using Technology (BIT) framework, which is based on: Acceptability, Adoption, Appropriateness, Feasibility, Fidelity, Implementation costs, Penetration and Sustainability.

Results: Acceptability (i.e., perception of the treatment as useful or satisfactory): 86% of adolescents rated the app as at least a moderately acceptable treatment on the Treatment Evaluation Inventory. Adoption (i.e., initiation of use of the intervention): 94% of adolescents downloaded the app, and all of them used it after their first log-in. Appropriateness (i.e. perceived relevance of fit of the intervention within a context): adolescents spontaneously reported (in open-ended questions) positively on: 1) usability and ease of navigation (37%); 2) design, layout and interface (35%); and 3) content was easy to understand, fun, and useful (83%). Feasibility (i.e., extent to which the intervention can be successfully used in a specific context): no technical issues were reported. Fidelity (i.e., intended use versus the actual use): 40% of adolescents completed the treatment. Penetration (i.e., integration of the practice within the service): 49 new users accessed the app in the six months after the study finished. Sustainability (i.e., extent to what the practice is maintained): 78% of clinics continued recommending the app after the end of the study.

Conclusions: According to the BIT framework, the implementation of WebMAP Mobile was successful but further work is needed to increase app usage (fidelity).

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CITATION AWARD WINNER

Paper Session 28

11:00 AM–11:15 AM

PAIN CATASTROPHIZING PREDICTS LESS PHYSICAL ACTIVITY THROUGHOUT THE DAY IN KNEE ARTHRITIS

Ruixue Zhaoyang, PhD¹, Lynn M. Martire, Ph.D.¹¹Penn State University, University Park, PA

Chronic or persistent pain affects approximately one-third of adults in the United States and the prevalence is twice as high in those 60 years and older. Musculoskeletal disorders such as knee osteoarthritis (OA) are the primary cause of chronic pain in older adults. Recommended self-management strategies for knee OA include staying physically active in the face of pain, but many patients avoid activities they are capable of doing. Previous research shows that pain catastrophizing (i.e., negative cognitive-emotional responses to real or anticipated pain) varies from day to day and predicts increased pain; one important but unexamined question is the extent to which patients are less physically active on days in which they catastrophize more about their pain. The current study utilized data from 145 knee OA patients who completed electronic daily diaries for 22 days and wore an accelerometer on their hip to capture the number of steps per day and minutes of moderate-vigorous physical activity (> 760 activity counts per minute). At the beginning of each day, patients reported their pain catastrophizing regarding the day ahead using two items from the Coping Strategies Questionnaire (e.g. Today I feel that the pain is terrible and is never going to get any better). Consistent with our predictions, on mornings when patients catastrophized more than usual about their pain in the day ahead, they engaged in fewer minutes of moderate to vigorous physical activity that day (estimate = -3.23, $p = .022$) and tended to take fewer steps (estimate = -158.15, $p = .055$). These analyses controlled for patients' morning negative affect and self-efficacy for managing pain, as well as daily pain severity and accelerometer wear time. To our knowledge, this is the first study to show that daily negative thoughts regarding pain are associated with less subsequent physical activity as measured objectively. Cognitive-behavioral interventions that reduce pain catastrophizing may also enhance physical activity, with longer-term benefits for weight management and physical function.

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CITATION AWARD WINNER

Paper Session 28

11:15 AM-11:30 AM

COGNITIVE BEHAVIORAL THERAPY FOR PEDIATRIC ABDOMINAL PAIN DISORDERS REDUCES CAREGIVER ANXIETY

Natoshia R. Cunningham, Ph.D.¹, Anne E. Kalomiris, M.A.²¹Michigan State University, Grand Rapids, MI; ²Nationwide Children's Hospital, Columbus, OH

Pediatric functional abdominal pain disorders (FAPD) are associated with increased rates of anxiety in affected youth and their caregivers. CBT can improve pain-related outcomes, and a CBT approach (i.e., Aim to Decrease Anxiety in Pain Treatment [ADAPT]) targeting both pain and anxiety improves pain-related outcomes and anxiety symptoms in youth with FAPD. However, caregiver anxiety is common in youth with FAPD and is associated with poorer functioning in pediatric FAPD, though it is unknown if child-focused CBT may also impact caregiver anxiety. The current study examined 1) if ADAPT reduces caregiver anxiety and 2) the relation between caregiver anxiety and child symptoms (i.e., pain, disability, anxiety) following treatment. A total of 79 caregiver-child dyads completed this randomized clinical trial, with 40 of those dyads randomized to receive ADAPT. Caregiver anxiety (anxiety subscale of the Depression Anxiety and Stress Scale; DASS) as well as child symptoms of pain (Visual Analog Scale; VAS), Functional Disability (Functional Disability Inventory; FDI), and anxiety (Screen for Child-Anxiety Related Emotional Disorders; SCARED) were assessed at baseline and following treatment. Multiple linear regression in Stata version 15 was used to assess differences in anxiety symptoms for caregivers whose children completed ADAPT versus medical TAU using maximum likelihood estimation (MLE). Child clinical symptoms (i.e., VAS, FDI, SCARED, separately) at post-treatment were regressed on caregiver anxiety at post-treatment, controlling for the child's respective baseline symptom (i.e., VAS, FDI, SCARED) and caregiver anxiety at baseline. Caregivers of children assigned to ADAPT demonstrated lower anxiety symptoms following treatment when compared to those receiving treatment as usual (TAU), $b = -1.42$, $SE = 0.68$, $t = -2.10$, $p = .036$, 95% CI = [-2.75, -0.09]). In addition, caregivers with more reported anxiety symptoms following treatment also had children who reported more pain ($b = 0.21$, $SE = 0.07$, $t = 3.24$, $p = .001$, 95% CI = [0.08, 0.34]), and anxiety ($b = 1.05$, $SE = 0.49$, $t = 2.15$, $p = .032$, 95% CI = [0.09, 2.01]) following treatment. The relation between caregiver anxiety and child functional disability was non-significant. Results reveal that a brief, effective, multi-method child-focused intervention targeting pain and anxiety may also potentially improve caregiver anxiety, which is also related to child pain and anxiety. Directions for future work are suggested that may improve outcomes for youth with FAPD.

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Paper Session 28

11:30 AM-11:45 AM

VETERAN PERSPECTIVES ON USING SOCIAL ROBOTS FOR AT-HOME CHRONIC PAIN MANAGEMENT

Erin D. Reilly, Ph.D.¹, Arielle Scoglio, MPH², Shelley Kind, M.S.³, Elina Talis, MA⁴, Karen S. Quigley, Ph.D.⁵¹Bedford VA Medical Center, Bedford, MA; ²Edith Nourse Rogers Memorial Veterans Hospital, Cambridge, MA; ³Suffolk University, Boston, MA; ⁴William James College, Brighton, MA; ⁵Northeastern University, Needham, MA

Social robots (SR) are increasingly being investigated as tools to engage patients in at-home mental and physical interventions through personal interactions. Our study's objective was to understand veteran patient responses and usability concerns for using an-home SR (Jibo) to manage chronic pain. The 2.5-hour one-on-one SR interaction included: 1) an introduction, 2) setting an exercise goal, 3) a stretching exercise, and 4) discussing recent stressors. Participant SR feedback was evaluated using the Intrinsic Motivation and Perceived Usefulness Scale (ITAM), System Usability Scale (SUS), and Robotic Social Attribute Scale (RoSAS). Videotaped interviews were coded to identify user reactions and usability issues of the SR interface. Participants were 12 veterans (mean age=59.5, 83% male) with an average pain rating of 5.8 (range=1–10).

On the ITAM, veterans reported high levels of perceived motivation for SR use ($m=4.9$, $SD=0.2$), ease of use ($m=4.7$, $SD=0.5$), and usefulness for health management ($m = 4.7$, $SD=0.4$). Veterans also reported high usability for the human-robot interaction ($m=40.4$, $SD=4.9$) on the SUS (range=10-50). In terms of affective response, RoSAS scores (range=1-9) indicated that veterans found the SR to be competent ($m=8.3$, $SD=0.9$), warm ($m=7.7$, $SD=1.8$), and comforting ($m=8.5$, $SD=1.3$).

Veterans reported multiple comorbidities (e.g., partial paralysis, tinnitus) that could make SR use difficult and suggested that the SR should understand their specific challenges. Suggestions for improvement included audio changes (e.g., tone, gender) and more options for interactions (e.g., touchable icons). Some veterans (56%) reported data security/privacy concerns and requested the ability to lock/protect their SR data. Most participants (89%) reported highly enjoying the SR's personality ("funny", "friendly", "like a person"), and reported that this helped them feel motivated and supported through management of exercise, medication, and daily stress. All participants reported that they would be comfortable and interested in having SRs at home with them.

Overall, veterans with chronic pain found the SR highly usable, potentially useful, and enjoyed their interactions enough to want their own at-home SR. Feedback indicated that usability, usefulness, and "personhood" may be uniquely linked for SR interventions. Findings suggest that using social, interactive robotic platforms may be an effective approach for chronic pain and emotional care management.

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Paper Session 29

10:45 AM–11:00 AM

USING MIXED METHODS TO UNDERSTAND PATIENT EXPERIENCES ASSOCIATED WITH PERCEIVED RACIAL/ETHNIC DISCRIMINATION IN HEALTHCARE

Leslie R. M. Hausmann, PhD¹, Audrey L. Jones, PhD², Shauna E. McInnes, BA¹, Susan L. Zickmund, PhD³¹VA Pittsburgh Healthcare System, Pittsburgh, PA; ²VA Salt Lake City Health Care System, Salt Lake City, UT; ³University of Utah School of Medicine, Salt Lake City, UT

Healthcare experiences that contribute to perceptions of discrimination due to one's race or ethnicity are poorly understood and have primarily been examined in small qualitative studies. Our objective was to identify healthcare domains that are associated with perceived discrimination using data from a large mixed-methods study of racial/ethnic and gender disparities in patient satisfaction. White, African American, and Latino patients sampled from 25 Veterans Affairs (VA) Medical Centers completed semi-structured interviews on their healthcare experiences and a measure assessing whether they ever experienced racial/ethnic discrimination while seeking VA healthcare. We derived nine domains of dissatisfaction with care from interviews and entered the domains as binary predictors of perceived discrimination in a multilevel model adjusting for patient characteristics and site. We conducted a thematic analysis to further understand the significant domains. Of 622 participants (30.4% White, 37.8% African American, 31.8% Latino; 57.4% female; mean age=53.4), 233 (37.4%) perceived racial/ethnic discrimination in healthcare. Individually, 6 of 9 domains correlated with perceived discrimination: dissatisfaction with care quality, facilities, continuity of care, interactions with providers/staff, provider/staff demeanor, and pharmacy services (all $p < 0.006$). In a combined model, poor interactions with providers/staff (OR=2.91, 95% CI=1.85–4.56) and negative provider/staff demeanor (OR=2.32, 95% CI=1.52–3.56) remained significant. In the domain of poor interactions, the most frequent themes of dissatisfaction were that providers or staff were rude, condescending, or hostile; did not listen to patients; and were not informative. For negative demeanor, the most frequent themes involved lack of care/concern from providers or staff, feeling stigmatized, and perceiving providers or staff as untrustworthy. For both domains, participants referenced clinicians more often than non-clinical staff in dissatisfaction statements (poor interactions: 51% vs. 30%, respectively; negative demeanor: 46% vs. 15%). Our study suggests that negative interpersonal experiences while obtaining healthcare are strong correlates of perceived racial/ethnic discrimination. The findings underscore the need for interventions that strengthen the soft skills of both clinical and non-clinical staff, and/or structural changes that create a more welcoming, caring, and patient-centered culture.

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Paper Session 29

11:00 AM–11:15 AM

IMPACT OF FATHERHOOD IDENTITY, FATHER SELF-EFFICACY, AND MACHISMO ON PARENT-CHILD CONFLICT AMONG PROBLEM DRINKING LATINO MEN

Alberto Cifuentes, LMSW¹, Cristina Mogro-Wilson, PhD, MSW²¹University of Connecticut, West Haven, CT; ²University of Connecticut, Hartford, CT

Latino men are more likely to binge drink and, consequently, engage in risky behavior than their non-Latino male counterparts in the United States. While the literature consistently supports the relationship between positive father-child relationships and decreased adolescent alcohol use, there is a gap in the knowledge base regarding how fatherhood affects alcohol use for Latino men. The current study analyzed the impact of two Latino cultural constructs, traditional machismo and caballerismo, as well as fatherhood identity and father self-efficacy on the parent-child relationship among Latino fathers with problem drinking behaviors. This study explored data from 309 Latino fathers who participated in a web-based questionnaire administered by Qualtrics, a third-party online survey company. Of the sample, about 51% of the sample ($n=157$) identified as Mexican American while 22% identified as Puerto Rican, 8% as Central American, 7% as Cuban, 7% as South American, and 5% as Dominican. The average age of the father was 37 years old. Multiple regression was used to assess the ability of traditional machismo, caballerismo, child-parent relationship (closeness and conflict), father self-efficacy, and fatherhood identity to understand problem drinking after controlling for the father's acculturation, father's age, and youngest child's age. Latino fathers with higher levels of traditional machismo and child-parent conflict and lower levels of fatherhood identity significantly predicted higher problem drinking ($p < .01$). Moreover, the overall model including an interaction term of fatherhood identity and traditional machismo was significant. For Latino fathers, fatherhood identity moderated the relationship between traditional machismo and problem drinking ($p < .05$). High levels of traditional machismo and low levels of fatherhood identity were related to increased problem drinking. However, high levels of caballerismo, a close parent-child relationship, and high levels of father self-efficacy were not related to less problem drinking. This study's findings highlight the importance of social identity for Latino men and offer a strengths-based perspective for prevention of alcohol misuse. With the large expansion of the Latinx population in the U.S. coupled with the growth of alcohol misuse among Latino males, it is crucial to find innovative and culturally competent models of fatherhood intervention for this population.

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Paper Session 29

11:15 AM–11:30 AM

“BREAST IS BEST” MESSAGE PENETRATES, LIP SERVICE DOMINATES: PERSPECTIVES FROM AFRICAN AMERICAN WOMEN IN WASHINGTON, D.C.

Aubrey Villalobos, MPH, MEd, DrPHc¹, Catasha R. Davis, PhD², Sahira Long, MD, IBCLC, FAAP, FABM³, Anayah Sangodele-Ayoka, CNM, MSN, MSEd⁴, Monique M. Turner, PhD⁵, Shawnika J. Hull, MA, PhD⁶, Maria Lapinski, PhD⁵

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Background: Breastfeeding is a behavior that has many benefits for mother and child, yet rates of initiation, duration and exclusivity for non-Hispanic Black women and babies are lower than HealthyPeople 2020 targets. Complex factors across social ecological levels influence breastfeeding. Generations of racialized economic and gender oppression, limiting opportunities for and visibility of human milk feeding, contribute to health disparities over the life course of African Americans.

Aim: As part of a study exploring infant feeding norms and decision making, we aimed to document current breastfeeding attitudes in Washington, D.C., where rates of breastfeeding among African American women are low and health disparities are high, and explore what social, environmental, and policy contextual factors correlate with attitudes.

Methods: Five focus groups were conducted with African American mothers living in Washington, D.C. who had at least one child between 2016–2019 (N=30). Transcripts were coded deductively, by the first two co-authors, for constructs in the Theory of Normative Social Behavior and inductively with a Black Feminism lens.

Results: Participants shared overwhelmingly positive attitudes, using the “breast is best” idiom often. Regardless of socioeconomic status (SES), participants agreed that breastfeeding norms have shifted over time to be more common and favorable in African American communities. However, many participants also described insincerity in breastfeeding promotion; they perceived breastfeeding is generally encouraged yet there is often a lack of emotional, informational and tangible support to make breastfeeding feasible. Socioeconomic context, driven largely by geographic racial segregation in D.C., was related to divergent attitudes about availability of support. Changes in policies and messaging from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) were perceived by many participants with lower SES as a driving force in shifting attitudes and norms recently. Perceptions of local laws regarding workplace policies to protect breastfeeding also differed by SES.

Discussion: These findings suggest progress has been made in D.C., thanks in part to WIC's efforts, to shift attitudes and norms about breastfeeding in African American communities. Differences in actual or perceived availability of support for breastfeeding and protection under legislation offer opportunities for interventions to continue improving breastfeeding rates and reducing health disparities for African American Washingtonians.

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Paper Session 29

11:30 AM–11:45 AM

PRENATAL PREDICTORS OF INFANT SLEEP AND HEALTH DISTURBANCES AMONG LATINO FAMILIES

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Sleep disturbances during infancy are among the most common concerns reported to pediatricians and are linked to a number of subsequent behavioral and health problems later in childhood. However, few studies have examined sleep patterns among Latino infants who have been shown to sleep approximately 30 minutes less per day than non-Latino White infants. Consequently, more studies are needed to examine what factors may predict infant sleep disturbances in Latino families. The purpose of the current study was to investigate whether certain characteristics during pregnancy (i.e., maternal stress and depression, quality of the relationship with one's romantic partner, and maternal health status) and the postnatal period (i.e., infant temperament and stress level) were associated with the sleep behaviors (e.g., co-sleeping) and sleep quality of Latino infants and their families participating in a longitudinal study on the effects of stress on maternal and infant health outcomes. Our sample consisted of 100 low-income pregnant women (75% annual income < \$19K; 71% Latina) who completed stress (Perceived Stress Scale) and depression (Edinburgh Postnatal Depression Scale) assessments during their first trimester of pregnancy (mean gestational age=10+4 weeks). At three months postpartum, women completed an assessment on their infant's sleep patterns/behaviors and health status. Results showed that 50% of our sample had elevated stress levels and 17% had high depressive symptoms during pregnancy. At postpartum, 63% of mothers reported co-sleeping with their infants in the same bed, with 11% reporting that their infants had difficulty sleeping. Hierarchical regression analyses revealed that: (1) co-sleeping with one's infant occurred more often among mothers who had a poor relationship with their romantic partner and among infants who had a difficult temperament ($R^2=.23, p<.01$); and (2) poorer sleep quality was observed among infants of mothers who had higher levels of stress and depression during pregnancy and among infants experiencing higher levels of postnatal stress ($R^2=.23, p<.01$). Our results provide growing evidence for the role of prenatal stressors and depression in having persisting, long-term effects on infant sleep and health outcomes during the early postnatal period. Specific to Latino families, these results support the need to examine cultural variations in parenting style and expectations with respect to perceptions of infant sleep behaviors, sleep quality, and health status.

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Paper Session 30

10:45 AM-11:00 AM

ASSOCIATIONS BETWEEN MILK CONSUMPTION AND BMI WITHIN MEXICAN-AMERICAN AND NON-HISPANIC WHITE POPULATIONS

Sara E. Fleszar-Pavlovic, n/a¹, Katie E. Alegria, MA², Jacqueline N. Hua, n/a¹, Anna V. Song, PhD³¹University of California, Merced, Merced, CA; ²University of California, Merced, CA; ³UC Merced, Merced, CA

As of 2016, 39% of the U.S. adult population are classified as obese (CDC, 2017). The prevalence of obesity is a growing concern because it is a precursor for other negative health outcomes such as diabetes, stroke, and heart disease. Although diet modification is critical in treating and preventing obesity, dietary guidelines are unclear. In particular, there is a permeating belief that milk consumption is protective against obesity. However, findings from the literature on the associations between milk consumption and BMI are mixed. Further, research in this domain largely focuses on ethnically homogeneous populations even though the cultural significance of milk may vary across ethnic groups. For example, despite recommendations that adults consume non-fat or low-fat milk, whole milk is an important commodity of traditional Mexican culture and 85% of Mexican Americans consume whole milk daily. Furthermore, Mexican Americans are at the highest risk for obesity. The current study examines associations between BMI and milk consumption within Mexican American and non-Hispanic White populations via a secondary data analysis of the 2015-2016 survey cycle of the National Health and Nutrition Examination Survey (NHANES). Adults who self-identified as Mexican American or non-Hispanic White and were > 18 years old were included in the analyses (N= 2,853; 50.9% female; M_{age} = 51.1). Logistic regression quantified the relationship between obesity/overweight classification (BMI), milk consumption, ethnicity, and covariates. In this study, non-Hispanic Whites were less likely to be overweight/obese compared to Mexican Americans, OR = 0.81 (95% CI: 0.76 - 0.86). Participants who reported greater milk consumption over the past 30 days were less likely to be classified as overweight/obese than those who indicated that they did not consume milk, OR = 0.87 (95% CI: 0.79 - 0.96). Milk consumption was negatively associated with overweight/obese status, but only for non-Hispanic Whites, OR = 0.85 (95% CI: 0.79 - 0.99). Milk consumption did not significantly relate to overweight/obese status for Mexican Americans (OR = 1.06, 95% CI: 0.85 - 1.32). For non-Hispanic Whites, milk consumption is a protective factor against being overweight/obese. However, this protective factor was not observed for Mexican Americans. There may be a more complicated relationship between milk consumption and BMI. Further, the health benefits of milk consumption may differ by racial/ethnic group.

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Paper Session 30

11:00 AM-11:15 AM

EFFECT OF A CULTURALLY ADAPTED BEHAVIORAL WEIGHT LOSS INTERVENTION AMONG LATINO ADULTS: THE VIDA SANA RANDOMIZED CLINICAL TRIAL

Lisa Goldman Rosas, PhD, MPH¹, Lan Xiao, PhD¹, Nan Lv, PhD², Elizabeth M. Venditti, PhD³, Megan A. Lewis, PhD⁴, PATRICIA ZAVELLA, n/a⁵, Kristen Azar, RN, MSN/MPH⁶, Jun Ma, MD, PHD²¹Stanford University, Palo Alto, CA; ²University of Illinois at Chicago, Chicago, IL; ³University of Pittsburgh School of Medicine, Pittsburgh, PA; ⁴RTI International, Seattle, WA; ⁵University of California, Santa Cruz, Santa Cruz, CA; ⁶Sutter Health, Palo Alto, CA

Background: Latinos are one of the fastest growing racial/ethnic groups in the US and are more likely to be obese and at elevated cardiometabolic risk compared to non-Hispanic whites. Identifying effective approaches for weight management is of critical importance for preventing chronic disease in this population.

Methods: Adult Latinos with a body mass index (BMI) of 25 or higher and metabolic syndrome, prediabetes, and/or a history of gestational diabetes were recruited in primary care and randomized to receive the 12-month Vida Sana intervention or usual care and followed for 24 months. Vida Sana was a culturally adapted coach-facilitated lifestyle intervention that included a family-based orientation session and 22 group sessions over 12 months (12 weekly, 4 biweekly, and then 6 monthly). Participants received monthly email messages for an additional 12 months. The primary outcome was weight loss at 24 months (97% retention). Secondary outcomes included weight loss and achieving ≥5% weight loss at 12 months. Associations of intervention adherence and baseline characteristics with weight loss outcomes were also examined.

Results: Participants (n=191) were middle aged (50.2 [SD 12.2] years), 62% female, 57% of Mexican origin, and had a mean BMI of 32.4 (SD 5.7) at baseline. Weight loss did not differ significantly by group at 24 months (-1.1 kg [SD 5.7] vs. -1.1 kg [SD 7.1]; p=0.93). However, weight loss was significantly greater in the intervention group (-2.6 kg [SD 6.0]) than the control group (-0.3 kg [SD 4.2]) at 12 months (mean difference -2.1 (95% CI -3.6, -0.7); p=0.005). At 12 months, 26% of intervention participants compared to 9% of control participants achieved ≥5% weight loss (p=0.003). Those who achieved ≥5% weight loss at 12 months attended more intervention sessions (16.6 [SD 7.6]) compared to those that did not (12.4 [SD 7.6], p=0.03). Baseline characteristics associated with greater weight loss over 24 months included older age (β=-0.1 [SD 0.04], p=0.02), living with ≥3 people versus fewer (β=-2.5 [SD 1.2], P=0.04), higher acculturation (β=-1.5 [SD 0.6], p=0.02), and higher body dissatisfaction (β=-0.8 [SD 0.4], p=0.05).

Conclusions: Among Latino adults at risk for chronic disease, a culturally adapted behavioral lifestyle intervention was effective for weight loss over 12 months but not 24 months. Weight loss was greatest among those who attended more intervention sessions and those who were older, more acculturated, living with more people, and with a greater body dissatisfaction.

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Paper Session 30

11:15 AM-11:30 AM

INSIGHTS TO NEURAL RESPONSE TO FOOD CUES IN CLASS III AND CLASS I/II OBESITY FROM ENDOMETRIAL CANCER SURVIVORS SEEKING WEIGHT LOSS

Nora L. Nock, PhD¹, Anastasia Dimitropoulos, PhD¹¹Case Western Reserve University, Cleveland, OH

The rates of severe obesity (Class III: BMI ≥ 40.0 kg/m²) and endometrial cancer (EC) incidence and mortality have been increasing significantly in the U.S. Women with severe obesity have a higher risk of EC development and mortality compared to those with Class I/II obesity (BMI: 30 to < 40 kg/m²) or those of normal weight (BMI: 18.5 to < 25 kg/m²). Although it is well-known that adults with severe obesity are more likely to die and be more metabolically unhealthy compared to those with lower classes of obesity, only a few neuroimaging studies have focused solely on adults with severe obesity and no prior studies have evaluated the neural response to food cues by class of obesity in adults with or without cancer. Therefore, we conducted a functional magnetic resonance imaging (fMRI) visual food cue task in 85 Stage I EC survivors with obesity seeking weight loss who were enrolled in a lifestyle intervention (NCT01870947) at baseline prior to starting the intervention. We evaluated the neural response to high-calorie compared to non-food images after an overnight fast and after eating a standardized luncheon meal and, for analyses, grouped patients by their obesity class at baseline (Class I/II: n=38; Class III: n=47). In the fasted state, we observed differences in the neural activation patterns by obesity class. Specifically, we found increased activation in the orbitofrontal cortex (OFC) and precuneus among Class III patients and, decreased activation in the insula and posterior cingulate (PC) among Class I/II patients (whole brain cluster corrected, $p < 0.05$). In the fed (satiated) state, we found increased activation in the dorsolateral prefrontal cortex (dLPFC) among Class III and Class I/II patients (whole brain cluster corrected, $p < 0.05$). The increased activation observed in regions associated with cognitive control/inhibition (dLPFC) and motivation (OFC) in patients with Class III obesity are consistent with the summative literature in obesity but the decreased activation found in regions associated with taste information processing (insula) and memory (PC) among Class I/II obese in the fasted state provides new insights. In this first study evaluating the neural response to high-calorie food cues by obesity class in EC survivors, our results highlight the need for further examination of food-related neural circuitry among different classes of obesity and reinforce the importance of targeting frontal brain regions, in particular, the dLPFC, in weight loss interventions.

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Paper Session 30

11:30 AM-11:45 AM

ADHERENCE MATTERS: PREDICTING WEIGHT LOSS AMONG OVERWEIGHT ADULTS WITH KNEE OSTEOARTHRITIS

Alexis Oliveira, n/a¹, Shannon L. Mihalko, PhD²¹University of South Carolina, Columbia, SC; ²Wake Forest University, Winston Salem, NC

Introduction: Nearly 57% of obese U.S. adults have knee osteoarthritis (KOA). Treatment recommendations for adults with KOA include dietary weight loss and exercise. However, adherence rates to these recommendations vary, with low attendance consistently reported in the literature. Although adherence is a predictor of weight loss among overweight adults, there is a lack of studies that have examined whether adherence predicts weight loss among overweight adults with KOA. Further, the mechanistic underpinning of this relationship has not been studied in this population. Therefore, the objectives of this study were to examine whether adherence predicted weight loss among overweight adults with KOA and to determine whether exercise self-efficacy or pain mediated the relationship between adherence and weight loss.

Methods: The Intensive Diet and Exercise for Arthritis (IDEA) study was an 18-month, randomized control trial for overweight adults with KOA. To examine the outcome of intentional weight loss, only participants randomized to the diet-induced weight loss or the combined diet-induced weight loss plus exercise interventions were included in the analysis. Adherence was calculated as a ratio of attendance to the number of prescribed sessions. Diet adherence, exercise adherence, and weight loss were measured over 18 months. Multiple regression analyses were used to determine the associations between intervention adherence and weight loss at 18 months. Mediation analyses were used to determine whether change in self-efficacy or pain over the course of the intervention mediated the association between adherence and weight loss.

Results: There were 304 adults (65.5 ± 6.1 yrs; 33.6 ± 3.7 kg/m²) included in these analyses. Adherence to both interventions was high at 18 months ($\geq 60\%$). Adherence at 18 months was significantly associated with 18-month weight change for the diet-only and diet plus exercise groups ($r = -0.52$ and $r = -0.38$, respectively). Neither change in self-efficacy nor pain mediated the relationship between adherence and weight loss (Sobel $p > .05$).

Conclusions: Individuals with higher intervention attendance lost more weight during the study. Increased exercise self-efficacy and decreased pain were associated with better attendance; however, neither factor helped to explain the mechanism underlying the relationship between adherence and weight loss. Since adherence plays an important role in weight loss, future studies should examine how self-efficacy, pain, and program variables impact adherence to weight loss interventions among overweight adults with KOA.

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Paper Session 31

10:45 AM–11:00 AM

PERCEPTIONS OF PUBLIC HEALTH PRIORITIES AND ACCOUNTABILITY AMONG U.S. MAYORS

Monica Wang, ScD, MS¹, Luisa Godinez Puig, N/A², Katharine Lusk, MPP³¹Boston University School of Public Health, Newton, MA; ²Boston University, Washington, DC; ³Boston University, Boston, MA

Objective: Mayors play a pivotal role in advancing the health of their cities, yet little is known about mayors' priorities and attitudes regarding public health challenges. This study aims to assess mayors' perceptions of top health challenges facing their cities, examine mayors' perceptions of accountability for public health challenges, and explore predictors of perceived accountability.

Methods: Data are from a nationally representative survey of U.S. mayors (N=110) and publicly available data repositories and sources on city-level health metrics. Participants were asked to identify the greatest health challenge facing their city (open-ended). Perceived accountability for nine public health issues (asthma, gun violence, hunger/malnutrition, mental health, lead and other toxicants, obesity, opioids, other substance abuse, and traffic accidents) was assessed by asking participants to rate the extent to which they believe constituents hold them accountable for each of the nine public health issues (not at all, a little, somewhat, or very accountable). City-level health metrics were derived from the City Health Dashboard 500 Cities, the Centers for Disease Control and Prevention, and the US Department of Transportation's National Highway Traffic Safety Administration. We conducted descriptive analyses and a series of ordinary least squares multivariable regression models to examine associations between mayoral and city-level characteristics (predictors) and level of perceived accountability (outcome) for each of the nine public health issues.

Results: Mayors most frequently cited obesity/chronic diseases (25%), opioids/addiction (24%), health care access (15%), and mental health (14%) as the top health challenges facing their cities, yet identified traffic accidents, gun violence, and environmental toxins as health issues for which they believe constituents hold them most accountable (obesity ranked lowest). Democratic mayors rated higher accountability from constituents for gun violence ($\beta=0.78$; $SD=0.26$; p -value $p<0.01$), hunger/malnutrition ($\beta=0.75$; $SD=0.25$; $p<0.01$), asthma ($\beta=0.40$; $SD=0.18$; $p<0.05$), and obesity ($\beta=0.46$; $SD=0.18$; $p<0.05$), than Republican mayors. Compared to female mayors, male mayors rated lower accountability for hunger/malnutrition ($\beta=-0.029$; $SD=0.016$; $p<0.1$), other substance abuse ($\beta=-0.026$; $SD=0.015$; $p<0.1$), and mental health ($\beta=-0.033$; $SD=0.23$; $p<0.05$). Prevalence of opioid deaths in a city was the only health outcome that was positively associated with perceived accountability ($\beta=0.019$; $SD=0.010$; $p<0.05$).

Conclusions: Findings indicate a discrepancy between mayors' perceptions of pressing public health challenges vs. perceived accountability to address such challenges. Findings can inform strategies to engage local policymakers in cross-sector collaborations to improve city and community health.

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MERITORIOUS AWARD WINNER

Paper Session 31

11:00 AM–11:15 AM

DOES WHERE YOU LIVE MATTER? THE BUILT ENVIRONMENT AND INTERVENTION-RELATED CHANGES AMONG RURAL ADULTS WITH OBESITY

Brittney N. Dixon, MPH¹, Abraham J. Eastman, M.S.¹, Umelo A. Ugwoaba, B.S.¹, Andrea N. Brockmann, M.A.¹, Charlayne A. Scarlett, M.P.H.¹, Vivian Bauman, M.S.¹, Meena N. Shankar, MS, RD, CCRC¹, Michael Perri, PhD², Kathryn M. Ross, Ph.D., M.P.H.¹¹University of Florida, Gainesville, FL; ²University of Florida, College of Public Health and Health Professions, Gainesville, FL

Background: The built environment may play a critical role in weight regulation as it can facilitate or restrict individual ability to engage in key weight-related behaviors. To date, research results have been equivocal; while most studies have found that participants in more favorable environments experience greater improvements in eating and activity behaviors compared to those in less favorable environments, others have showed the opposite pattern of effects. Moreover, most of this work has focused on urban areas; there has been limited research regarding how built environment factors may influence intervention outcomes in rural areas.

Methods: The current study combined intervention outcome data from the Rural Lifestyle Eating and Activity Program (Rural LEAP) with data from the United States Census Bureau, the Florida Geographic Data Library, and other publicly available datasets in order to examine associations between key built environment factors and weight loss. Rural LEAP included 445 adults with obesity ($M \pm SD$ age = 55.4 years, $BMI = 36.5 \text{ kg/m}^2$, 79% White, 83% Female) who completed a 4-month, in-person behavioral weight loss program. For the current study, participant addresses were geocoded and a 2-mile buffer was established to identify key built environment factors (e.g., food establishments, modified retail food environment index [mRFEI], fitness/recreation facilities, parks, and trail length). Multilevel models were used to examine the association between built environment and weight status during the initial weight loss program (baseline to Month 4).

Results: Participants lost an average (mean \pm SD) of $8.3 \pm 4.9 \text{ kg}$ from baseline to Month 4. Greater numbers of convenience stores, $\beta=0.42$, $p=.030$, dollar stores, $\beta=1.26$, $p=.042$, and full-service restaurants, $\beta=0.16$, $p=.020$, were associated with higher weight across time points; however, there were no associations between these food environment features and weight loss from baseline to Month 4, all $ps > .05$. There were no significant associations between the number of supermarkets, fruit/vegetable markets, fast food restaurants, or mRFEI and either weight across time or weight losses from baseline to Month 4, all $ps > .05$. Further, there were no significant associations between any physical activity environment factors and either weight across time or weight change from baseline to Month 4, all $ps > .05$.

Conclusion: Results demonstrated that certain built environment features may be associated with greater body weight; however, no built environment features included in the current study promoted or hindered intervention-related weight losses. Future research should investigate whether these built environment features may impact maintenance of lost weight after the end of initial intervention.

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Paper Session 31

11:15 AM-11:30 AM

EFFECT OF PATIENT-PHYSICIAN RACE/ETHNICITY CONCORDANCE ON HPV VACCINE INITIATION

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Background: Physicians play a critical role in influencing parent acceptance of the HPV vaccine. Patient-physician racial/ethnic concordance has been found to be a factor influencing the patient-physician relationship and subsequent outcomes in numerous contexts but, to date, little has been done to investigate concordance on vaccination outcomes. Concordance may influence HPV vaccination initiation rates by improving patient-physician communication and fostering trust. We examined the association between patient-physician race/ethnicity concordance on HPV vaccine initiation.

Methods: We studied pediatricians (n=121; mean age 46.5; non-Hispanic White 56.8%) and their patients (n=46,964; mean age 13.8; non-Hispanic White 52%) from a Texas pediatric clinic network from 2014 to 2015. Multinomial logistic regressions, adjusted for physicians' individual differences, were used to assess the association between patient and physician race/ethnicity on HPV vaccination rates.

Results: Overall, HPV vaccine initiation varied across groups (64% of non-Hispanic Black, 65% of Hispanic, and 53% of non-Hispanic White patients). Forty-two percent of non-Hispanic Black, 48% of Hispanic, and 61% of non-Hispanic White physicians were racially/ethnically concordant with their patients. Racial/ethnic concordance was associated with higher rates of HPV vaccine initiation compared to discordant physician-patient relationships. Non-Hispanic White patients had a lower odds of initiating HPV vaccination than patients of all other races (OR 0.64, CI[0.61-0.66]), although these odds increased when they saw a non-Hispanic White physician (aOR 0.72, CI[0.62-0.84]). Non-Hispanic Black (aOR 2.28, CI[1.47-3.53]) and Hispanic (aOR 2.42, CI[1.67-3.49]) patients were more likely than non-Hispanic White patients to initiate HPV vaccination with non-Hispanic Black and Hispanic doctors, respectively.

Conclusion: It is important that providers understand the potential impact their personal demographics may have on their relationship with their patients. These findings suggest sustained support for initiatives to increase provider diversity. Research is needed to further understand the mechanisms that drive discordant patient-physician relationships and affect outcomes like HPV vaccination.

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Paper Session 31

11:30 AM-11:45 AM

PLURALISTIC IGNORANCE AND INTERDISCIPLINARY PHYSICIANS' ATTITUDES ABOUT ABORTION

Nicholas B. Schmuhl, PhD¹, Jenny A. Higgins, PhD, MPH¹, Laurel W. Rice, MD¹, Cynthia K. Wautlet, MD, MPH¹, Kelsey Wright, n/a¹, Helen L. Zukin, n/a¹

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Introduction: Abortion is stigmatized in the U.S. Perhaps due in part to stigma, little evidence exists about physicians' attitudes about abortion—especially beyond specialists involved in reproductive healthcare. Pluralistic ignorance—a perceived gap between group members' own attitudes and other group members' attitudes—has been observed among professionals and healthcare providers who work with stigmatized populations. Little is known about pluralistic ignorance in the context of abortion attitudes, including whether it perpetuates abortion stigma. Physicians are an excellent population in which to examine this issue because pluralistic ignorance may impact practices and professional quality of life among those who participate in any aspect of abortion care, including referrals.

Methods: We used both mail and online recruitment methods to survey the entire clinical faculty of the largest academic medical center in a Midwestern state about their own and other physicians' attitudes toward abortion access. Specifically: Please tell us if the following groups of people oppose or support unrestricted access to abortion: Yourself Your peers on the clinical faculty. Participants were asked to respond on a seven-point Likert-type scale, ranging from “oppose a lot” to “support a lot,” with “neither oppose nor support” as a midpoint.

Results: 913 physicians representing more than 20 medical specialties completed the survey (67% response rate). A strong majority (80.2%) supported abortion access at least to some degree, while 16.6% were opposed to some degree, and 3.3% claimed neutrality. When asked to estimate support among their professional peers, a slightly smaller majority (77.5%) perceived a supportive climate of opinion. Meanwhile, 16.1% perceived a neutral climate, and 6.4% perceived a climate of opposition to abortion among their peers. A chi-square test of independence found this inconsistency between own attitudes and perceived climate of opinion among professional peers to be statistically significant, $\chi^2(4, N=861)=225.15, p<0.001$. Those who supported abortion access themselves slightly overestimated support among their peers (86.2%), while neutral participants and abortion opponents vastly underestimated support (18.5% and 44.7%, respectively). Participants in every category overestimated neutrality, with neutral participants incorrectly perceiving themselves as a strong majority (70.4%). Interestingly, abortion opponents perceived themselves to be a much larger minority (27.0%) than self-appraisals suggest.

Discussion: Across specialties and socio-demographics, physicians in our sample overwhelmingly supported unrestricted access to abortion and the efforts of abortion providers. Discrepancies between own support and perceived peer support for abortion is indicative of pluralistic ignorance, and possibly anti-choice stigma.

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Paper Session 32

10:45 AM–11:00 AM

CAN CLINICAL DECISION SUPPORT HELP “RESCUE” PATIENTS FROM NONRESPONSE TO ONLINE OBESITY TREATMENT? PRIMARY CARE PERSPECTIVES

Hallie M. Espel-Huynh, PhD¹, Carly M. Goldstein, PhD², Rena Wing, PhD³, Graham Thomas, PhD⁴¹Alpert Medical School of Brown University/The Miriam Hospital, Providence, RI; ²The Miriam Hospital/Alpert Medical School of Brown University, Providence, RI; ³Alpert Medical School of Brown University, Providence, RI; ⁴Brown Medical School, Providence, RI

Background: Online behavioral obesity treatment (OBOT) is an efficacious, low-cost approach for weight management in primary care. However, when OBOT is delivered pragmatically, many patients experience treatment nonresponse (e.g., poor initial weight loss; early disengagement). Clinical Decision Support (CDS) tools could identify early risk for OBOT nonresponse in primary care, inform providers of risk, and facilitate prompt “rescue” intervention, thereby improving OBOT outcomes. The present study sought to explore primary care clinicians’ perspectives on a hypothetical CDS tool for OBOT.

Method: Semi-structured qualitative interviews were conducted with $N = 14$ primary care-based nurse care managers (NCMs) who use OBOT with their patients. Interviews described a CDS tool designed to alert NCMs of a patient’s risk for poor OBOT outcome, then explored the NCM’s beliefs about the helpfulness of such alerts, preferred alert format, and desired frequency. Interviews were audio-recorded and transcribed, then coded according to valence of attitudes toward each CDS component discussed.

Results: Among NCMs, 12 of 14 (86%) believed the CDS would be useful in clinical practice; 2 were ambivalent. Of those with favorable views of CDS, 100% desired alerts for patients at risk for early disengagement from OBOT, 92% for patients who remain engaged but struggle to lose weight, and 75% for patients failing to follow through on a recommendation to begin OBOT. NCMs also expressed a desire to receive alerts for patients achieving successful weight loss milestones. Concerns about CDS also emerged, particularly regarding the time required to deliver rescue interventions in response to alerts and a need to streamline the CDS system into existing clinic workflow. Email alerts were the most commonly preferred alert format (50%), followed by electronic health record (25%) or OBOT clinician dashboard (25%) alerts. Most NCMs (80%) preferred alerts to be delivered in “digest format” at a frequency of every 1–2 weeks.

Conclusion: NCMs in primary care view CDS as a potentially useful tool to guide outreach to patients at risk for early disengagement or insufficient weight loss in OBOT, and to a lesser extent failure to follow through on OBOT referral. CDS alerts must be delivered such that NCM burden is minimized and interventions are streamlined with existing clinic infrastructure.

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Paper Session 32

11:00 AM–11:15 AM

BELIEFS ASSOCIATED WITH HEALTH INFORMATION AVOIDANCE

Heather A. Orom, PhD¹, Elizabeth A. Schofield, MPH², Erika A. Waters, PhD, MPH³, Marc T. Kiviniemi, PhD CPH⁴, Jennifer L. Hay, PhD⁵¹University at Buffalo, BUFFALO, NY; ²Memorial Sloan-Kettering Cancer Center, New York, NY; ³Washington University in St Louis, St Louis, MO; ⁴University of Kentucky, Lexington, KY; ⁵Memorial Sloan Kettering Cancer Center, New York, NY

Background: The tendency to avoid health information is relatively common and is associated with lower knowledge of health risks, greater uncertainty about personal risk, and lower engagement in protective health behavior. Health information avoiders pose challenges for health communication interventions and therefore merit greater understanding. We tested whether low health agency beliefs and/or risk perceptions underlie health information avoidance.

Methods: We conducted two studies with representative samples ($Ns = 1005$ & 600) testing whether beliefs that differentiate people with high and low agency with respect to health (e.g., locus of control, time orientation, fatalism, cognitive causation or the belief that thinking about a disease could increase the likelihood of getting it) and perceived risk (worry, perceived absolute and comparative risk, perceived disease severity, disease unpredictability, family history of disease) were related to avoiding health information about diabetes and colon cancer. Avoidance was assessed with adapted versions of Howell & Shepperd’s (2016) information avoidance scale. We conducted exploratory factor analyses (EFA) to group the beliefs measures thematically followed by hierarchical regressions testing relations to avoidance.

Results: The EFA yielded 4 factors: *internal locus of control*, *belief in fate* which were both related to agency and *risk perception*, and *dread* which were related to risk perception. Information avoidance was common; in samples 1 and 2, 30% and 34% indicated they preferred to avoid information about diabetes and 20% and 19% of respondents preferred to avoid colorectal cancer information. Results were largely consistent across studies and diseases. As indicated by AIC and BIC fit statistics, most blocks of variables improved fit over and above those previously entered. In the final models, beliefs indicating lower internal locus of control or a belief that fate influences health were consistently associated with more avoidance; the dread variables, having a family history of the disease and worry about getting the disease, were associated with less avoidance. Perceived absolute and comparative risk perceptions were not reliably associated to avoidance.

Discussion: Beliefs that underlie low health agency are associated with avoiding information about diabetes and colon cancer. Given that health information avoidance likely undermines a wide range of health communication and self-regulation strategies, health communication efforts might be advanced by developing intervention approaches that involving enhancing perceived control over health prior to offering health messages. These interventions could have applications across a range of health threats yielding significant public health impact.

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Paper Session 32

11:15 AM-11:30 AM

VISUAL RISK DEPICTIONS IN ONCOLOGY: A SYSTEMATIC REVIEW

Dannielle E. Kelley, PhD, MPH¹, Megan C. Roberts, PhD², Elizabeth L. Seaman, PhD, MHS³, Erin M. Ellis, MPH, PhD⁴, William Klein, PhD⁵

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Background: As cancer risk is increasingly communicated through graphic and digital means, a better understanding of effective cancer risk communication across diverse audiences is needed. A small number of literature reviews highlight at least 3 gaps: 1) absence of cancer-specific reviews; 2) text and numerical expressions were not independently examined as components of visual risk depictions; 3) affective outcomes were rarely examined despite the important role of affective response in interpreting risk information. This systematic review of visual cancer risk depictions maps the state of the science and provides a prescriptive summary of effective approaches.

Methods: Forty-eight peer-reviewed studies across 45 articles published from 2001-2018 were identified for inclusion across 3 databases (PubMed, PsychINFO, EMBASE) with 5 criteria for inclusion: 1) English language, 2) full-text articles, 3) empirical research, 4) cancer-related, and 5) accessible visual risk depictions. Characteristics of study samples, designs, visual risk depictions, and outcome measures were extracted.

Results: Across studies, most participants were White ($M = 72\%$) and female ($M=72\%$). Most studies employed quantitative designs (71%), followed by qualitative (19%), and mixed methods (10%). Studies of breast cancer risk were most common (43%), followed by colorectal (19%), general cancer (14%), lung (6%), prostate (4%), and other cancer sites (14%). Most studies (73%) included textual and/or numerical information within the visual risk depiction. Primary outcomes assessed were risk perceptions (44%), knowledge (35%), preference/liking (25%), intentions (17%), affective responses (10%), self-efficacy (8%), and trustworthiness (4%). While icon arrays (60%) and bar graphs (40%) were the most common visual risk depictions across studies, heterogeneity across studies in terms of visual composition, outcomes measured, and risks inherent to cancer site, individual, and contextual factors preclude formal comparison of effectiveness across types of visual risk depictions.

Conclusion: Results suggest optimal visual risk communication strategies depend on population, cancer, and contextual characteristics. Future research should consider a wide range of primary outcomes, as well as mediating and moderating factors, to aid understanding of the mechanisms through which visual depictions of risk operate across cancer sites and populations to move towards more effective cancer risk communication.

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Paper Session 32

11:30 AM-11:45 AM

A COPING SELF-EFFICACY MANIPULATION TO DISCOURAGE HEALTH INFORMATION AVOIDANCE

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Although early detection and diagnosis of disease are critical in promoting long-term health outcomes, people sometimes avoid learning their risk for disease. Past research suggests that people who report fewer coping resources are more likely to avoid learning their risk for disease. Other studies suggest that people are more likely to avoid learning their risk when the disease is untreatable than when it is treatable. Taken together, we think that these studies implicate coping self-efficacy, or confidence in one's ability to cope with life's challenges, as a possible factor in avoidance. In two studies, we investigated 1) whether coping self-efficacy correlated with avoidance of disease risk feedback and 2) whether a manipulation to increase coping self-efficacy would reduce avoidance.

In Study 1, participants ($N=107$; $M_{age}=18.74$, $SD_{age}=1.78$; 58.4% women) completed a risk calculator for a fictitious disease that they believed was real. They then received the option to learn or avoid their risk for that disease. They also completed measures of general and coping self-efficacy. A logistic regression predicting participants' decision to learn or avoid their risk revealed that coping self-efficacy, but not general self-efficacy, was related to avoidance of disease risk feedback. In Study 2, participants ($N=270$; $M_{age}=19.5$, $SD_{age}=2.27$; 78.5% women) completed a risk calculator for type 2 diabetes. They were then randomly assigned to reflect on positive past coping strategies (*high coping self-efficacy* condition), negative past coping strategies (*low coping self-efficacy* condition), or to move on to the next part of the study (*control* condition). Next, as in Study 1, participants received the option to learn or avoid their risk. Significantly fewer participants in the high coping self-efficacy condition (41.5%) avoided learning their diabetes risk as compared to those in the control condition (57.0%). Surprisingly, those in the low coping self-efficacy condition fell between these two groups (51.1%). We suspect that this is because considering one's abilities at all, even if considering generally ineffective strategies, prompted people to feel more capable of coping with bad news. Taken together, these results suggest that coping self-efficacy is likely a good target for interventions aimed at reducing health information avoidance and suggest a need for future research examining possible interventions.

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MERITORIOUS AWARD WINNER

Paper Session 33

10:45 AM-11:00 AM

IMPACT OF DIFFERENT TYPES OF UNCERTAINTY ON PUBLIC WILLINGNESS TO PARTICIPATE IN PRECISION MEDICINE RESEARCH

Chelsea L. Ratcliff, MA¹, Bob Wong, PhD², Janie DeFriez, n/a², Kimberly Kaphingst, ScD²¹University of Utah, Bluffdale, UT; ²University of Utah, Salt Lake City, UT

Precision medicine research is critical to finding solutions for health challenges now and in the future. Such research will depend on the ability to recruit large cohorts of participants to share their genetic, environmental, and lifestyle data. How patients and the broader public interpret information about these research programs and decide whether to participate is largely unknown. This mixed-method study examined prospective responses, focusing in particular on reactions to two types of uncertainty: (a) uncertainty about the scientific utility of sharing one's biospecimens and other health data for research, and (b) uncertainty about the privacy, security, and intended uses of such data. We conducted an online survey experiment with a national sample of U.S. adults ($N = 709$; 56% white; 53% male; ages 18–81, $M_{age} = 38.2$) recruited by Qualtrics Panels. Participants read a news article published by a national news outlet about the All of Us Research Program, which was adapted to convey either certainty or uncertainty of each type in a 2 x 2 design. After reading the article, respondents rated their attitudes toward precision medicine research and willingness to join a cohort, then elaborated on their choices using text responses. Direct and mediated paths between condition and outcomes were tested. Overall attitudes were positive ($M = 5.5$ out of 7) and the majority of participants (65%) reported being somewhat or very likely to join a cohort. Communicating (un)certainly of either type did not have a direct impact on outcomes. Instead, uncertainty perceptions mediated outcomes, with higher perceived uncertainty leading to lower attitudes and willingness to join. Decision-maker characteristics (e.g., health and biomedical science literacies, prior research experience, and sociodemographics) significantly influenced both uncertainty perceptions and decision outcomes. To further examine the impact of uncertainty, two authors conducted thematic coding of open-ended responses (intercoder reliability ranged from $\alpha = .70$ – 1). Participants expressed both optimism about the scientific utility of participating and concerns or uncertainty about future use of their data. Notably, data uncertainty did not preclude overall positive comments or willingness to join. More often, individuals' reluctance came from uncertainty about other factors, such as logistics (e.g., travel to research facilities), compensation, and possible side effects from treatments—frequently signaling misconceptions about the nature of participation in this type of research. Overall, findings suggest the public will be comfortable with a degree of uncertainty about scientific utility and data governance in precision medicine research, and that successful participant enrollment will be well-supported by transparent and literacy-enhancing approaches to communicating with prospective participants.

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Paper Session 33

11:00 AM-11:15 AM

CHARACTERIZING PHYSICIAN-PATIENT COMMUNICATION IN GENOMIC MEDICINE: INFLUENCES ON SHARED DECISION-MAKING

Suzanne C. O'Neill, PhD¹, Susan Vadaparampil, PhD², Richard Street, PhD³, Tanina Foster Moore, PhD⁴, Claudine Isaacs, MD¹, Hyo Han, MD⁵, Bianca Augusto, BS², Jennifer Garcia, MA², Katherine Lopez, B.A.¹, Matilda M. Brilleman, n/a⁶, Susan Eggly, PhD⁴

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Introduction: Tumor genomics increasingly informs cancer treatment planning. Clinical guidelines for women diagnosed with early-stage, ER+ breast cancer incorporate genomic profiling tests, such as the Oncotype DX Recurrence Score (RS) test, to guide treatment decisions. Women with high RS tumors benefit from combined chemo- and hormonal therapy, whereas patients with low RS tumors receive hormonal therapy alone. Overall, patients with an intermediate RS can forgo chemotherapy, but some uncertainty remains. Little is known about how patients and oncologists discuss test results and treatment plans. We examined RS- and treatment-related content and the variation of shared decision-making (SDM) and patient-centeredness across the three RS categories.

Methods: As part of a larger intervention trial to support patient-oncologist communication, a subset of clinical encounters ($N=46$) were audiorecorded, transcribed and coded for 1) RS- and treatment-related content, 2) SDM using the OPTION-5 and 3) patient-centeredness using the PCC Global. We examined differences by RS category using mixed models, adjusting for nesting within oncologist.

Results: Patients ($M_{age}=60$ years; 80% White) received low (33%), intermediate (52%) or high (15%) RS. Chemotherapy rates increased with RS (low=0%; intermediate=13%; high=71%). Patients with a high RS were more likely to receive a chemotherapy recommendation ($p < .001$), hear about the risks/side effects ($p=.003$), and have their preferences elicited ($p=.04$) than those with intermediate or low RS. Women with high RS also were less likely to be counseled about the risks/side effects of hormonal therapy ($p < .001$), as these were likely delayed until chemotherapy completion. The importance of hormonal therapy adherence was discussed infrequently across all categories (13%). Elements of SDM increased with RS, including eliciting patient preferences ($F=5.42$, $p=.03$), integrating preferences ($F=8.23$, $p=.009$) and the quality of SDM ($F=5.98$, $p=.02$). Patient-centeredness was uniformly high ($M=4.09/5$, $SD=.25$) and did not vary across RS ($p=.61$).

Discussion: Despite treatment recommendations for intermediate RS being less certain and perhaps more aligned with SDM tenets, encounters of women with high RS contained more SDM elements. Our results underscore that in the larger scope of translational genomic medicine, there is a need for further examination of patient-provider communication to understand its impact on health and behavioral outcomes.

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Paper Session 33

11:15 AM-11:30 AM

EXAMINING FAMILY DISCLOSURE AND PSYCHOLOGICAL STATE AFTER RECEIVING ACTIONABLE RESULTS FROM A GENOMIC SCREENING PROGRAM

Gemme Campbell-Salome, M.A., Ph.D.¹, Adam Buchanan, MS, MPH, CGC², Cara Z. McCormick, MPH³, Amy C. Sturm, MS⁴¹Geisinger Medical Center, Danville, PA; ²Geisinger, Hillsborough, NC; ³Geisinger, Forty Fort, PA; ⁴Geisinger, Lewis Center, OH

Currently research examining family communication about genetic testing and psychological reactions to positive results provides a working understanding for indication-based settings. However, as healthcare systems prioritize precision medicine and genetic screening, further investigation on such topics is needed in genomic screening programs for unselected populations. This study examined family communication and psychological state after receiving actionable results from a genomic screening program. For this study, MyCode participants were contacted to complete a survey 5-19 months after receiving a result ($M = 10.1$, $SD = 3.44$). MyCode is a community health initiative enrolling patients in a research biobank and genomic screening program to return clinically actionable results. Of those contacted ($N = 1067$), 104 female and 70 male ($N = 174$, 16.3%) participants completed a survey. Survey questions asked who participants shared results with and disclosure motivations. Participants disclosed results to 0-14 relatives ($Mdn = 4$, $SD = 2.73$). Most frequent reasons to disclose included feelings of obligation (73%), providing relatives with risk information for medical decision-making (77%), and encouraging cascade testing (54.6%). Disclosing results among family was predicted by feeling obligated to share ($\beta = 2.18$, $t(173) = 4.98$, $R^2 = .13$, $p < .001$) and providing risk information for relative's medical decision-making ($\beta = 1.50$, $t(173) = 3.13$, $R^2 = .05$, $p < .01$). Surveys also included measures of decisional regret about testing and receiving results ($\alpha = .92$) as well as positive feelings about receiving results ($\alpha = .82$) and uncertainty about what results meant for participants and family ($\alpha = .64$) from the FACToR scale. When participants felt less decisional regret about receiving results, they were 1.7 times more likely to disclose their results to encourage cascade testing ($\chi^2 = 14.80$, $df = 5$, $R^2 = .03$, $p < .05$). Feeling uncertain about what results meant made it 1.15 times more likely a participant would share to encourage cascade testing ($\chi^2 = 5.97$, $df = 1$, $R^2 = .05$, $p < .05$). Examining psychological state, future optimism was predicted by less decisional regret ($\beta = .20$, $t(169) = 3.48$, $R^2 = .09$, $p < .001$) and more positive feelings about receiving results ($\beta = -.03$, $t(169) = -3.29$, $R^2 = .09$, $p < .001$). Uncertainty about what results meant for the participant and their family also predicted future optimism ($\beta = .03$, $t(169) = 2.06$, $R^2 = .06$, $p < .05$). Interestingly, less decisional regret about testing predicted more uncertainty about what results meant ($\beta = 1.24$, $t(168) = 3.67$, $R^2 = .09$, $p < .001$), suggesting a complex relationship between uncertainty and emotions regarding receiving results from a genomic screening program. Overall, findings provide salient reasons patients disclose results, which providers can use in counseling to motivate patients to share results with family and promote cascade testing.

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Paper Session 33

11:30 AM-11:45 AM

COMMUNICATION OF OBESITY GENOMICS INFORMATION TO PARENTS

Susan Persky, PhD¹, Rebecca Ferrer, PhD², Megan R. Goldring, MA³, Haley E. Yaremych, BA⁴, Brittany M. Hollister, PhD, BA⁵, Margaret K. Rose, n/a⁶¹National Human Genome Research Institute, Bethesda, MD; ²National Cancer Institute, Pittsburgh, PA; ³Columbia University, New York, NY; ⁴Vanderbilt University, Nashville, TN; ⁵National Institute of Health, Bethesda, MD; ⁶Indiana University School of Medicine, Indianapolis, IN

Background: Effective implementation of precision medicine for behavioral change in the future will require understanding people's responses to complex, multifactorial information about genomic risk for common diseases. This may be especially true for diseases with a behavioral risk component, such as obesity. Although previous work suggests that providing family history-based genomic obesity risk information may alter parents' child-feeding behavior, more research is needed to understand the effects of providing complex, genomic information as well as the mechanisms through which such communication influences feeding behavior change.

Method: 184 mothers and fathers who self-identified as overweight and had children aged 3-7 were randomly assigned to receive information related to genetic and/or family environment (FE)-based factors in children's obesity risk. Parents then chose foods for their child using a validated virtual reality (VR)-based feeding measure. Parents were re-contacted one week later to complete a food frequency questionnaire.

Results: Mothers who received information about genetic factors in their child's future obesity risk fed more calories from the VR buffet than when genetics was not discussed [$F(1,171) = 5.13$, $p = .025$], and both mothers and fathers fed fewer calories when FE was discussed [$F(1,171) = 4.92$, $p = .028$]. Parents also reported feeding their child more junk food and fatty meats at follow-up when they received genetic content without accompanying FE risk content [$F(1,174) = 4.79$, $p = .030$; $F(1,174) = 5.64$, $p = .019$]. Although parents reported feeling increased guilt when provided with FE-oriented information [$F(1,178) = 13.19$, $p < .0001$], guilt did not emerge as a mediator of feeding behavior change.

Conclusions: Our findings suggest that the multifactorial risk information pertaining to the interaction of both genetics and FE resulted in the most favorable pattern of outcomes, compared to information where only one cause (genetics or FE) was discussed. Although this multifactorial information type is the most complex to convey, it is also the most accurate and appears to temper feeding detriments associated with genetic-only information as well as increased guilt associated with FE-only information.

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Friday April 3rd, 2020 12:45 PM-1:45 PM

Panel 16

12:45 PM-1:45 PM

KEEP THEM COMING BACK: STRATEGIES FOR SUPPORTING ENGAGEMENT WITH DIGITAL HEALTH INTERVENTIONS

Emily G. Lattie, PhD¹, Rachel Kornfield, PhD¹, Joanna Buscemi, PhD², Brie Turner-McGrievy, PhD, MS, RD³, Evan M. Forman, PhD⁴

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Digital health intervention programs, including those delivered by text messaging, mobile apps, and websites, offer the potential to expand the reach and availability of evidence-based behavioral interventions. However, digital health intervention programs are frequently plagued by low levels of adherence and high rates of dropout. An emerging body of literature supports that there are multiple methods for increasing engagement with these types of programs, including methods to involve users in the design process, strategies to tailor content and services to specific users, and provision of human support. In this panel, experienced digital health researchers with backgrounds in clinical psychology, health communications, and nutrition will come together to discuss strategies for supporting user engagement with digital health interventions. The panel will examine the application of user-centered design strategies to guide the development of user interfaces and program features, as well as service and implementation plans. Opportunities to tailor automated text messaging programs to individuals will also be reviewed, including developing messaging strategies that deliver mental health-related content on the basis of individuals' characteristics (e.g. gender, depression/anxiety severity, self-efficacy). The panel will discuss the use of telephone-based coaching, and a stepped care approach to coaching intended to support use of an app-based intervention. The use of social support strategies, app features, and wearables will be discussed in the context of digital health interventions aimed at weight loss. The panel will also discuss the challenge of asking participants to engage with mHealth interventions that require sustained, burdensome user input, in particular weight loss apps which require detailed logging of eating, drinking and perhaps risk behaviors over a matter of months or even years. Additionally, the panel will discuss lessons learned from attempts to use gamification to enhance interest and compliance with interventions requiring repeated training sessions, such as daily computerized neurocognitive interventions. There will be ample time for questions and discussion. Panelists will reflect on the barriers and facilitators of engagement in past digital health intervention studies and provide guidance on forthcoming research in this field.

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Panel 17

12:45 PM-1:45 PM

OPEN SCIENCE IN BEHAVIORAL MEDICINE: MULTIPLE PERSPECTIVES AND PROVOCATIVE QUESTIONS

Katherine Chabalko, n/a¹, Michael A. Hoyt, Ph.D.², Kyra Hamilton, PhD³, Bradford W. Hesse, PhD⁴, Jacob J. Keech, Assoc MAPS, BPsych(Hons)³, Ian Sullivan, n/a⁵, A. J. Tomiyama, Ph.D.⁶

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Understanding and embracing the tenets of “open science” is garnering traction among researchers in behavioral medicine, including SBM’s “Task Force on Open Science”. Open science is seen as a scientific movement aimed at increasing openness, integrity, and reproducibility of scholarly research. It calls upon behavioral medicine researchers to consider complex, and often provocative, questions related to data sharing, registration of research plans and methods, and transparency in publishing. At the same time, many researchers are unsure about how to adopt these practices, and are concerned about how to “do” open science across commonly used behavioral medicine research designs, including longitudinal observational studies and experimental research.

This panel, organized by the International Journal of Behavioral Medicine, aims to provide both practical knowledge about open science practice as well as useful discussion from multiple perspectives. Panelists will include behavioral medicine principal investigators, a graduate student, a publisher (from Springer Publications), an NIH Representative (National Cancer Institute), journal editors/associate editors, as well as a representative from the Center for Open Science.

We will use “Slido”, a smartphone platform that allows the audience to ask and rate questions. The most highly rated questions will be asked of the panel. The moderator will also maintain a list of questions. Examples include:

- Will open science change how I do research?
- How will open science affect publishing for me?
- Is the evidence base strong enough to begin to shift incentive structures toward rewarding and acknowledging open science practices?
- How can we guard against public humiliation when studies are not replicated?
- How can the time required for pre-registration and other open science practices be built into student research programs?
- When communicating our research to lay people and the media, how can we convey the difference between a pre-registered and entirely transparent study, and studies that have not followed these practices?
- How can we balance openly sharing resources and with protecting our ideas and intellectual property given that not all researchers engage in open science practices?
- What are the special considerations of open science for observational research? Does open science mean I cannot conduct secondary analyses?
- What does it mean to register a study beforehand with a journal or study registry?
- What is a badge?
- How long should I wait before sharing data? How do I even share my data?
- How can an open science approach in medicine be cultivated to include behavioral outcomes as an indispensable part of systemic change?
- What are some of the “big solutions” related to open science for persistent problems in behavioral medicine that SBM could encourage?

*Note. This panel was invited as a presidential panel session.

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Panel 18

12:45 PM-1:45 PM

THE SCIENCE OF PERSONALIZATION: SEPARATING THEORY, APPLICATION AND HYPE

Kate Wolin, ScD¹, Gary Bennett, PhD², David E. Conroy, PhD³¹Coeus Health, Chicago, IL; ²Duke University, Durham, NC; ³The Pennsylvania State University, University Park, PA

For decades, behavioral medicine has been attuned to the promise of personalization. Interest has only grown over time, with modern technologies providing new avenues of personalization and a combination of investment and hype from the private sector amplifying it. This panel will feature a look back at in personalization science from behavioral medicine, HCI and marketing followed by a discussion of the implications of the varying conceptualizations of personalization. The panel will then define current methods and modes of personalization in behavioral medicine from the most generic customization strategies (e.g., putting a patient's name in a message) to the most sophisticated model-based strategies (e.g., artificially intelligent systems that adapt decision rules in response to evolving dynamic models of behavioral responses). These strategies will be compared across a range of criteria including alignment with behavior change models, technologic and data requirements, and ease of adaptability to research or business needs. Examples of research and consumer applications will be highlighted to illustrate the penetration of personalization strategies in behavioral medicine and clinical practice. Key considerations for whether and how to select personalization strategies, as well as approaches to evaluating whether that strategy is succeeding, will be discussed. Finally, the panel will discuss practical approaches to using personalization in the development of commercial and research applications before facilitating a discussion with the audience. The panelists have experience in both research and commercial personalization strategies

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Panel 19

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DEBATING 4 INNOVATIONS 4 HEALTH IMPACTS

James Prochaska, Ph.D.¹, Julian M. Saad, M.Ed.²¹University of Rhode Island, Kingston, RI; ²University of Rhode Island, Newport, RI

This proposal will debate four innovative strategies for accelerating breakthroughs in population health. The first debate topic will focus on treating the “Big 4” (+1) risk behaviors (1. smoking, 2. alcohol misuse, 3. unhealthy eating, 4. inadequate exercise, and +1 stress management), separately, in multiple behavior clusters, or as a total system. The second topic will focus on whether Medicare for all or “Preventive Behavioral Care” is best for population health progress, with an emphasis within each position on what age groups should be prioritized for each intervention. The third topic will focus on whether financial incentives for participation in evidence-based programs or incentives for behavior change outcomes have greater impacts, with an emphasis on return on investment for healthcare insurers and/or employers. The fourth topic will consider treatments delivered by clinicians versus treatments delivered by robots (AI), with the emphasis on treatment engagement and outcomes.

Each presenter will use a 15x20 methodology (i.e. 15 slides, each slide delivered in 20 seconds) to present works that have been used in innovative population health conferences. This method will allow each debater to present their respective theoretical and empirical innovations for population health in quick but clear communication. After both debaters present, the audience will be asked questions (e.g. Is one case more compelling? Would the audience like to integrate the two positions?). A debate scoring/reflection card will be provided to all audience members to guide participation, collaboration, and progress.

This panel was formed to debate timely healthcare issues relevant to the 2020 presidential and general elections. It presents strategies for producing and assessing breakthroughs in population health (e.g. What percentage of risk populations are reached *and* what is the ROI for employees and insurers?). It models the 15x20 methodology to present engaging, time efficient, and teachable information that can be quickly used to make a compelling case to lawmakers, laypersons, funders, and potential collaborators. It speaks to issues of differential importance across professional generations by creating a collaborative model for mentors and mentees (Ph.D. students and major professors; interns and advisors; residents and veteran doctors). Most important, this panel addresses the conference theme of accelerating innovations to enhance the health and wellbeing of a range of populations.

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Panel 20

12:45 PM-1:45 PM

THE BEHAVIOUR CHANGE TECHNIQUE TAXONOMY AND THE MULTIPHASE OPTIMIZATION STRATEGY: HOW DO THEY WORK TOGETHER?

Sara Hoffman Marchese, M.S.¹, Angela F. Pfammatter, PhD², Susan Michie, BA, MPhil, DPhil³, Kate Guastafarro, PhD, MPH⁴, Bonnie Spring, PhD⁵¹Northwestern University, Chicago, IL; ²Northwestern University Feinberg School of Medicine, Chicago, IL; ³University College London, London, England, UK; ⁴Pennsylvania State University, University Park, PA; ⁵Northwestern University Feinberg School of Medicine, CHICAGO, IL

The Multiphase Optimization Strategy (MOST) is an engineering-inspired framework seeking to optimize the development and implementation of intervention studies. It consists of three iterative phases: preparation, optimization, and evaluation. The Behavior Change Technique Taxonomy (BCTT) is an expertly researched hierarchy of behavior change techniques (BCTs) used in behavior change interventions, with the end goal of creating a common language through which interventionists can define techniques of interest in their interventions in a consistent way. The purpose of this panel discussion is to explore ways in which MOST and the BCTT may align conceptually, and suggest how interventionists may wish to consider different BCTs during different phases of MOST. This panel discussion will primarily focus on the utilization of the BCTT as applied to the preparation phase of the MOST framework, but will consider the optimization and evaluation phases of MOST as well. The panelists will first overview the MOST framework, its phases, and the BCTT for the audience. Afterward, the first author will facilitate a discussion among the panelists as to how MOST and the BCTT may work together, and how utilizing clearly-defined BCTs within the MOST framework will help to address gaps in behavior change interventions. For example, within the preparation phase of MOST, the BCTT could help to define intervention targets of interest for future optimization in a consistent manner, such that other behavioral researchers have common terminology. In addition, within the preparation phase, researchers may consider how to identify the most minimal BCTs to use within an intervention component of an experiment, such that a more direct test of the BCT could be achieved. The panel will conclude with open discussion among panelists, and time for questions from the audience.

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Panel 21

12:45 PM-1:45 PM

DOES IT SPARK JOY? NOVEL STRATEGIES FOR PRODUCTIVE AND ENJOYABLE TEAM-BASED SCIENTIFIC WRITING AND CREATION

Jennifer M. Taber, PhD¹, Cynthia A. Berg, Ph.D.², Judi M. Hilman, Ph.D.³, Kathi Mooney, PhD³, Karina W. Davidson, PhD⁴¹Kent State University, Kent, OH; ²University of Utah, Salt Lake City, UT; ³University of Utah, Salt Lake City, UT; ⁴Northwell Health, Roslyn, NY

To conduct meaningful and impactful research, scientists must use a combination of creativity and logic to 1) identify significant questions, 2) develop strong study designs, and 3) communicate effectively through writing. Writing is an integral part of scientists' work; yet, many scientists struggle with writing, which is often slow and requires carving out devoted time to do so. As a result, resources focusing on individual strategies to improve writing accountability and technical skills have proliferated. Resources promoting innovative team approaches to creativity in scientific development have been less widely disseminated. Panelists will share exciting strategies—typically high energy, fast-paced, and involving significant social interaction—for writing effectively and thinking creatively. Panelists have successfully implemented group- and team-based writing and brainstorming strategies in their own labs and departments and are involved in training early-stage scientists in these processes. One panelist will discuss lessons learned from hosting successful annual 3-day multi-site, high-energy writing retreats that bring together vertical multi-site teams. These retreats are the culmination of a months-long planning process at which lab members organize in teams to analyze data and outline and write papers. Two panelists will describe unique courses they have designed: one panelist will discuss their course on creativity, discovery, and innovation in science and another will describe their bootcamp-style scientific writing course for graduate students. Another panelist will share techniques to facilitate collaboration, scientific synergy, and innovative priority setting at the group and organizational level. Finally, an early-career stage panelist will outline how they have used writing groups to enhance their productivity and enjoyment of writing. We argue that there are group-based strategies—at the lab and department level—that foster team science and can improve the quality of the scientific process from creation to dissemination. An overarching theme will include how to effectively connect and collaborate with others. Panelists have worked in a cancer center, traditional psychology departments, and for health service providers. Strategies are relevant for scientists at all career stages and in multiple career settings. Attendees will leave the session with concrete steps they can implement in their own lab/department.

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Panel 22

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HOW TO DEVELOP AND DELIVER AN EFFECTIVE PITCH

Ellen Beckjord, PhD, MPH¹, Danielle Blanch-Hartigan, PhD, MPH²¹UPMC Health Plan, Pittsburgh, PA; ²Bentley University, Waltham, MA

A pitch is a compelling way to quickly sell an audience on an idea, and is a presentation skill set of increasing value in research and practice. Academically-trained researchers and practitioners get ample support to develop effective presentation skills commonly used in teaching and at academic conferences, but comparatively less support to develop a skill set around pitching. As SBM attendees, particularly those working in digital health, venture more frequently into industry collaborations and environments, it is increasingly important that they know how to effectively pitch their ideas and their research. This *interactive* panel will be led by two SBM members who have received formal training in developing and delivering pitches, including use of pitching to successfully compete for research funding in academic medicine. The panel will function as a *pitch workshop*, giving SBM attendees an opportunity to develop pitching skills and try them out in a safe, low-pressure environment. We will orient attendees to eight core elements of an effective pitch; watch two videos that offer examples of pitches; and then give attendees time to create their own initial pitch using a method called "message mapping." The final part of the workshop will allow attendees to give their initial pitch and receive feedback from the co-presenters and other participants.

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Panel 23

12:45 PM-1:45 PM

EXTENDING SCIENTIFIC REACH: DEVELOPING SBM HEALTH POLICY POSITIONS AND ENGAGING PARTNER ORGANIZATIONS

Carl V. Asche, PhD¹, Judith K. Ockene, MA, MEd, PhD², Laura L. Hayman, PhD, MSN, FAAN, FAHA, FPCNA³, Lisa Kolavennu, MA, LCPC⁴, Akilah Dulin, PhD⁵

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The primary objectives of this panel are to: (1) Describe experiences and best practices related to creating SBM health policy briefs from the perspectives of authors and (2) Explain co-endorsing organizations processes for approving and disseminating SBM health policy briefs from the perspectives of co-endorsing organization representatives. The health policy brief author panelists will briefly discuss their recently published cancer-related and obesity/overweight management-related health policy briefs, respectively. These SBM health policy brief authors will describe how they arrived at the final drafts of their policy briefs, their experiences with reaching out to co-endorsing organizations and dissemination strategies. The authors will discuss their processes for identifying potential co-endorsing organizations whose missions align with the health policy brief position statements. The co-endorsing organizations will describe their experiences working with SBM as it relates to initial contact, processes used to review, approve (or deny) a co-endorsement request, and dissemination strategies for SBM health policy briefs. The session attendees will have the opportunity to engage with health policy brief authors and co-endorsing organizations to understand the processes related to SBM health policy briefs and co-endorsements from external organizations. It is expected that the panel discussions will increase session attendees' self-efficacy related to submitting and drafting SBM health policy briefs that align with and advance the mission of SBM.

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Panel 24

12:45 PM-1:45 PM

NIH CLINICAL TRIALS POLICIES: COMPLIANCE HINTS AND TOOLS FOR THE SOCIAL-BEHAVIORAL COMMUNITY

William N. Elwood, Ph.D.¹, Christine M. Hunter, PhD², DAWN A. MORALES, Ph.D.³, Rebecca J. Williams, Pharm.D, MPH⁴

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Though NIH Clinical Trials policies remain the same, the requirements for applications, protocols, and reporting continue to evolve. There are new NIH sample protocol templates and support materials expressly designed for behavioral and social scientists. This panel explains and orients participants to submit applications that meet peer review criteria for clinical-trial-related proposed projects, the timing and content requirements for projects in just-in-time or newly funded stages, and to file accurate annual reports and to submit and update information to ClinicalTrials.gov. Reporting and registration flexibilities for basic experimental studies with humans (BESH) also will be addressed.

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Panel 25

12:45 PM-1:45 PM

IMPLEMENTATION OF SOCIAL DETERMINANTS OF HEALTH SCREENINGS IN ROUTINE URGENT CARE

Andrea S. Wallace, PhD RN¹, Jia-Wen Guo, PhD¹, Shawna M. Sisler, MS, MA, MAPP, RN, NP², Brenda Luther, PhD, RN¹, Bob Wong, PhD¹

¹University of Utah, Salt Lake City, UT; ²University of Utah, Park City, UT

Despite decades of evidence linking social determinants to health outcomes, health service providers – incentivized by new integrated payment models – have just begun assessing “social needs” as part of service delivery. However, there is no clear evidence base to guide the implementation of screening and referral processes, much less how to evaluate effects on health outcomes. Our academic-community team developed means of implementing a screening process for busy ED settings, for communicating social needs to service providers, and for cross-walking data from service providers and clinical information systems. This panel explores our “lessons learned” during a Federally-funded HIT-implementation study.

Topic 1. We will propose a theoretical approach for integrating social determinants of health into routine health service delivery to improve health outcomes. The framework addresses 3 critical components: (1) high-quality screening that can take place in a clinical workflow; (2) means of effectively communicating the information to inform clinical decision making; and (3) effective community linkages with resources that meet their needs. The concepts of implementation, including feasibility, sustainability, and evaluation models will be explored as our approach to social needs screening and referrals during emergency service delivery.

Topic 2. Results of data linkages - We piloted the ED screening during 4-week rapid-cycle tests. Over 25 days, 210 patients were screened, of whom, 61% (n=129) indicated having one or more need. Of these, 52% (n=67) wished referral to 2-1-1; 39% of those referred (n=32) were ultimately reached by 2-1-1 specialists and referred to community agencies within 48 hours of discharge. Over 6 months, participants who communicated at least 1 need (N = 107) experienced an increase in ED use (1.07 vs 1.36, $p < 0.05$) while patients with no reported needs (N = 55) experienced an increase in primary care visits (0.24 vs 0.56, $p < 0.05$). The trend of increasing ED use was noted among participants with needs and who had received services from 2-1-1 (N=32, 1.97 vs 2.56, $p < 0.05$). Data on a larger patient sample (approximately 3000 patients) continue to be collected and will be incorporated into the presentation.

Topic 3. Implementation barriers and facilitators - Best practices for assessing social needs during clinical encounters should aim to minimize stigmatization and maximize accuracy while evaluating the impact on patients, providers, and community resources. We conducted semi-structured interviews with staff, including the registration team, guards, and supervisors. Content analysis identified themes of: questioning screening as a priority; assumptions of patient needs; avoidance of certain groups; varying comfort level with “stigmatizing” questions; and, concerns regarding which staff own this workflow.

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Panel 26

12:45 PM-1:45 PM

HOW LESS BECOMES MORE: KEY MOTIVATION AND MESSAGING IMPLICATIONS FROM THE “10-MINUTE BOUT” REMOVAL IN THE UPDATED PA GUIDELINES

Michelle Segar, PhD, MPH, MS¹, David X. Marquez, PhD, FGSA, FACSM, FSBM², Dori E. Rosenberg, PhD, MPH³, Katrina L. Piercy, PhD, RD⁴, Huhman Marian, PhD⁵

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Did you know that the recently updated United States Physical Activity Guidelines (PAG), include a game-changing recommendation that has profound messaging implications for our field? This new PAG opens the door for professionals across fields and countries to communicate in new ways that align with motivation and decision science, better permitting us to support people's psychological needs and ability to fit consistent movement into their lives. This session will focus on the removal of the “10-minute bout” requirement in the updated PAG. It will discuss the reasoning and data for taking this bout requirement out, the motivation and decision making science this change aligns with, and the potential challenges and opportunities it brings to our next-generation physical activity messaging and counseling. We will also consider how this shift in guidelines and the resulting new messaging strategies compare and contrast with other strategically designed physical activity campaigns (e.g., VERB).

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Panel 27

12:45 PM-1:45 PM

BUILDING BEHAVIORAL WORKFORCE CAPACITY: OPPORTUNITIES IN IMPLEMENTATION SCIENCE

Susan D. Brown, PhD¹, Charles R. Jonassaint, PhD, MHS², Melissa C. Green Parker, PhD³, Akilah Dulin, PhD⁴, Tiffany Carson, PhD, MPH⁵, Kirsten Bibbins-Domingo, PhD, MD, MAS⁶

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Academic institutions, federal agencies, healthcare delivery systems, and other stakeholders are increasingly invested in the field of implementation science, which seeks to integrate evidence-based interventions within “real-world” clinical and public health settings. Behavioral scientists are uniquely positioned to contribute to this burgeoning field, given its focus on changing the behaviors of providers, patients, and organizations to achieve wide-spread and sustained improvements in health outcomes. In this panel, diverse mid-career and senior scientists will discuss the varied career paths and disciplinary backgrounds that have prepared them to engage in implementation science; discuss the varied settings in which implementation scientists work; and highlight training resources and funding opportunities designed to build workforce capacity in this area. Positive insights from a federal Program Officer will also be shared. As relevant, panelists will discuss career challenges regarding intersecting identities (e.g., gender, race/ethnicity) and strategies to enhance resilience and commitment to scientific careers. Attendees will have opportunities to debate the resources that may be needed to bolster the next generation of implementation scientists.

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Panel 28

12:45 PM-1:45 PM

TRANSLATING RESEARCH INTO PRACTICE TO CLOSE THE HEALTH DISPARITY GAP IN THE LGBTQIA+ COMMUNITY

Lauren Wiklund, B.A.¹, Kaston D. Anderson-Carpenter, PhD, MPH, BCBA-D, LBA², Jae M. Sevelius, PhD³, Terence Ching, M.Soc.Sci, M.S.⁴, NiCole T. Buchanan, PhD, LP²

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The health and well-being of sexual and gender minoritized (SGM) individuals is a matter of public health concern. LGBTQIA+ individuals continue to experience negative and disparate health outcomes compared to heterosexual, cisgender peers (Rice, Vasilenko, Fish, & Lanza, 2019). Members of this community report overt discrimination and implicit bias from health care providers that interfere with their receipt of high quality, comprehensive care (Rice et al., 2019). The gold standard in clinical science calls for evidenced based practices to inform clinical care; however, most treatment protocols are based, developed, and normed on cisgender, heterosexual, European Americans. As a result, we measure successful treatment outcomes with a ceiling of equivalence to the normed population rather than creating protocols that could be more effective for a specific population (Hall, Yip, & Zarate, 2016). This perpetuates the harmful and oppressive practice of comparing minoritized people to the majority rather than creating a knowledge base that is tailored for their unique needs.

Translating research into policy and practice to address current and reduce future health disparities is of imminent importance. This panel will bring together a diverse group of researchers and activists at the cutting edge of their fields and invite lively audience discussion about innovative ideas for advancing health and well-being for SGM individuals. Topics addressed in this panel discussion will include transgender-specific wellness programs and interventions, psychedelic-assisted psychotherapy, and addiction treatment in marginalized communities. In addition to providing a discussion forum, members of the community are invited to coalesce in this academic forum.

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Panel 30

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THE CO-USE OF TOBACCO AND ALCOHOL IN CANCER CONTROL: CHALLENGES AND SOLUTIONS

Raimee Eck, PhD, MPH, MPA¹, David Wetter, PhD², Judith J. Prochaska, PhD, MPH³, Andrea King, PhD¹National Cancer Institute, Bethesda, MD; ²Huntsman Cancer Institute, University of Utah, Salt Lake City, UT; ³Stanford University, Stanford, CA

Both tobacco and alcohol are well-established risk factors for cancer morbidity and mortality. While awareness of the causal link between tobacco and cancer is widespread, only 30%-40% of the population expresses awareness of the causal link between alcohol and cancer. Consistent with the notion that health risk behaviors rarely occur in a vacuum, current and former tobacco use is a significant predictor of binge alcohol consumption, odds of cigarette use increase in a dose-dependent fashion with heavier alcohol use, and alcohol can serve as a contextual and/or disinhibitory trigger for daily or occasional smoking, leading to poorer quit rates and higher relapse. Co-use of alcohol and tobacco also can lead to a synergistic increase in the risk of some cancers (such as head and neck). Additionally, individuals with mental health disorders are known to be at significantly higher risk for use of multiple licit and illicit substances, as well as for cancer incidence and mortality. Unfortunately, the bulk of epidemiological research and interventions for cessation do not focus on tobacco and alcohol co-use.

This panel will bring together cross-cutting researchers to discuss a) the epidemiology and mechanisms of co-use of alcohol and tobacco and cancer risk; b) interventions addressing co-use of alcohol and tobacco; c) mental health in substance co-use and cancer risk; d) implications for cancer survivors and other vulnerable populations; and e) population level approaches to reducing cancer burden from tobacco that may be applied to alcohol and vice-versa.

Panelists will explore the co-use of alcohol and tobacco along the cancer control continuum, identifying populations at higher risk and the complexity in targeting these populations. The presence of a mental health condition adds another layer of complexity to prevention and treatment interventions. Finally, attitudes towards alcohol and tobacco use differ, which may result in differential bias in self-report of behaviors to providers and may influence framing and receipt of advice. Despite these challenges, there are promising interventions using pharmacological treatments and/or behavioral therapy to aid in cessation. The goal of this discussion is to focus on an often overlooked and neglected risk profile, highlight gaps in knowledge, and identify opportunities for research and interventions to improve prevention, treatment, and survivorship of cancer in the context of co-use of alcohol and tobacco.

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Friday

April 3rd, 2020

2:00 PM-3:15 PM

Symposium 52

2:00 PM-3:15 PM

PRESIDENTIAL SYMPOSIUM: MANAGEMENT OF PSYCHOLOGICAL DISTRESS IN PATIENTS WITH CANCER – ARE WE DOING THE RIGHT THING?

Joost Dekker, PhD¹, Kristi Graves, PhD², Terry Badger, PhD, RN³, Michael A. Diefenbach, PhD⁴¹Amsterdam University Medical Centers, Amsterdam, Noord-Holland, Netherlands; ²Georgetown University, Washington, DC; ³University of Arizona, Tucson, AZ; ⁴Northwell Health, Manhasset, NY

Distress is highly prevalent among patients with cancer. In patients in the anti-tumor phase of treatment, the reported prevalence rate ranges from 18% to 52%. Identification and treatment of distress is a clinical priority, because distress is a risk factor for non-adherence with medical treatment and for a poor outcome in physical, mental and social life domains. Currently, the dominant care paradigm for the management of distress is 'distress screening and referral for the provision of psychosocial care'. Dissemination and implementation science may guide efforts to optimize the design, implementation, and evaluation of distress screening programs. On the other hand, basic assumptions underlying the paradigm can be questioned. These assumptions concern the nature of support needed in coping with emotions. The overall goal of this symposium is to explore possibilities to improve psychosocial cancer care based on the screening paradigm, and to explore the need for an alternative care paradigm.

The first presenter will explore possibilities to improve psychosocial cancer care based on the screening paradigm, drawing on dissemination and implementation science. The second presenter will present recent data on the actual implementation of screening, addressing barriers and facilitators. The third presenter will present an alternative care paradigm, called 'supporting resilience and case finding'. The discussant will comment on how to advance the science of managing psychological distress in patients with cancer.

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2:00 PM-3:15 PM

MANAGEMENT OF EMOTIONS IN PATIENTS WITH CANCER: INTRODUCING A NEW CARE PARADIGM 'SUPPORTING RESILIENCE AND CASE FINDING'

Joost Dekker, PhD¹¹Amsterdam University Medical Centers, Amsterdam, Noord-Holland, Netherlands

The current paradigm for the management of emotional distress in patients with cancer is 'distress screening and referral for the provision of psychosocial care'. However, systematic reviews did not find evidence to support the effectiveness of the current paradigm. The main reason seems to be that many patients with cancer are unwilling to accept a referral for psychosocial care, thus seriously limiting the usefulness and effectiveness of the screening and referral program.

We argue that there is a need for a fundamental reconceptualization of the management of distress in patients with cancer, leading to a paradigm shift. We describe the rationale and characteristics of a new paradigm, called 'supporting resilience and case finding'. This new care paradigm has two main features. (1) Supporting resilience: (a) The treating team, consisting of doctors, nurses, and allied health staff, is responsive to the emotional needs of patients with cancer and provides emotional support. (b) The treating team provides information on external sources of emotional support. (2) Case finding: The treating team identifies patients in need of mental health care by means of case finding, and provides a referral to mental health care as indicated. Future research should focus on optimization of current clinical practice as directed by the new care paradigm.

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NEXT STEPS IN SCREENING FOR DISTRESS USING LESSONS FROM DISSEMINATION AND IMPLEMENTATION SCIENCE.

Kristi Graves, PhD¹, Shawna S. Ehlers, PhD, LP, ABPP², Emma Barker, MS³, Angela Mariscalsanchez, MS³, Michael A. Diefenbach, Ph.D.⁴, Kimberly Davis, PhD¹

¹Georgetown University, Washington, DC; ²Mayo Clinic, Rochester, MN; ³Georgetown University; ⁴Northwell Health, Manhasset, NY

As a mandated element for accreditation by the American College of Surgeons Commission on Cancer, cancer distress screening has been implemented in many different ways across centers in the United States. Dissemination and implementation science provides a framework for organizing approaches to initiating, improving and maintaining efficient approaches to distress screening. Use of interdisciplinary teams, recognition of human factor elements important to work flow and high quality care, and engagement with patients and families are important for optimizing the effectiveness of distress screening. Electronic systems for screening distress and communicating scores to providers appear to yield promising results, although challenges exist in many centers given the dearth of mental and behavioral health specialists. A case study at one cancer center highlights the benefits of using multiple measures for screening of distress. At the first visit, patients complete a screening using tablets that consists of the Distress Thermometer (DT), Problem Checklist and PROMIS measures of Anxiety and Depression. Patients are referred to a psychosocial oncology service with scores of 7 or higher on the DT or if they request to discuss an identified problem. Among 1286 patients, 41% reported moderate distress (scores 4-6 on the DT) and 7% reported severe distress (scores 7 or higher). Indication on the Problem Checklist of 'problems communicating with the medical team' was significantly associated with both anxiety ($t=2.68$, $p=.007$) and depression ($t=3.06$, $p=.002$) after controlling for overall distress scores, patient gender and level of education. These results suggest that perceived challenges with communication may underscore patients' unmet psychosocial needs. At this cancer center, facilitators to screening implementation included identification of a distress screening 'champion' with mental and behavioral health expertise and communication between social workers and a clinical psychologist. Challenges to screening included difficulties integrating screening into the electronic health record and a shortage of personnel resources for referral and follow up of patients with high distress. Dissemination and implementation science suggests the need for increased attention to work flow factors and integration of best practices from other disciplines such as human factors engineering to optimize screening, referral and follow-up of cancer patient distress. Questions to be answered include how to optimally design the interface for screening, triage, referral and management of distress over time; how to appropriately compensate providers for consultation time; how to identify and address communication gaps between multidisciplinary cancer care providers; and how to optimally structure multidisciplinary teams to improve outcomes for cancer survivors with distress.

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IMPLEMENTATION OF DISTRESS SCREENING ACROSS THE UNITED STATES

Terry Badger, PhD, RN¹, Elizabeth Ercolano, DNSc, RN², Mark Lazenby, PhD, RN³, Ruth McCorkle, PhD, RN²

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Background: In 2012, the American College of Surgeons (ACOS) Commission on Cancer (COC) required that accredited cancer centers integrate psychosocial distress screening by the end of 2015 to improve quality of life and prevent morbidity. However, uptake of screening is minimal with only 47% to 73% of eligible patients being screened. The slow rate of compliance to the COC mandate may be the result of institutional barriers including: (a) inadequate administrative support; (b) lack of an interdisciplinary oncology team; (c) no established distress screening protocols; (d) undereducated staff; (e) confusion about which screening tool to use; (f) immature electronic medical systems to aid in integrating the steps of comprehensive distress screening; and (g) inadequate internal or external psychosocial resources to assist in managing psychosocial distress. The Screening for Psychosocial Distress Program (SPDP) was developed to address these issues. We aimed to evaluate the outcomes of the SPDP.

Methods: The SPDP, a 5-year cancer educational and implementation-support program was tested by a one-group pre/post-test design on psychosocial distress screening implementation in a national sample of cancer care institutions. We enrolled five groups of 36 cancer care clinicians (180 total participants representing 90 institutions) from 37 states and Washington DC. Clinicians participated in two in-person workshops taught by content experts and quarterly implementation support conference calls over a two-year period. We evaluated institutions' capacity to implement the five steps of psychosocial distress screening at the start of the project and then every six months. The five steps include: (1) administer the distress screen; (2) evaluate the distress screen results; (3) refer patients with a positive screen to a health care provider; (4) follow-up with the health care provider; and (5) audit medical records for the distress screening.

Results: All 90 institutions reported statistically significant improved compliance in the five steps at 12 months versus 6 months: Step 1 ($p=0.001$); Step 2 ($p=0.001$); Step 3 ($p=0.002$); Step 4 ($p=0.011$) and Step 5 ($p=0.024$). Although compliance increased for all Cohorts between 6 and 12 months, there was lower rates of compliance for Steps 4 and Steps 5-versus the first three steps.

Conclusion: The lower rates of compliance by all five cohorts with Step 4 and Step 5 may be the result of institutional barriers including an: (1) inadequate amount of trained resources and (2) immature integrated electronic medical record. In general, the SPDP was effective in improving the uptake of distress screening by United States based cancer care institutions. Future research is needed on the use of a randomized adaptive design testing the optimal support and education to ensure implementation and maintenance of distress screening programs.

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EXAMINING THE SCIENCE OF CHILDHOOD OBESITY INTERVENTIONS: THREE RECENT SYSTEMATIC REVIEWS OF CRITICAL CONTEXTS

Joanna Buscemi, PhD¹, Jen Sanchez-Flack, PhD, MPH², Elizabeth Rea, B.A.³, Katherine Arlinghaus, MS, RD, LD⁴, Amy M. Bohnert, Ph.D.⁵

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⁵Loyola University Chicago, Evanston, IL

Childhood obesity remains a public health concern, affecting 18.5% of children nationally. Higher rates of obesity are evidenced among low-income children and children of ethnic and racial minority groups. Over the past few decades, there has been a proliferation of obesity prevention and treatment interventions that have been tested, and intervention strategies to improve diet and increase physical activity have been found to be effective. However, limitations to the literature remain including limited long term effects on body mass index and related health behaviors and barriers to long-term implementation and dissemination of evidence-based interventions. The purpose of the symposium is to highlight findings from three recent systematic reviews of obesity interventions across critical contexts for children, and to provide recommendations for future research based on these findings. First, Dr. Jen Sanchez-Flack will present a systematic review that utilized the RE-AIM framework to examine the implementation of obesity prevention interventions in early childcare/education settings. Limitations to the literature regarding external validity reporting will be discussed, and next steps for researchers will be described. Next, Elizabeth Rea will summarize research on youth's physical activity patterns across the entire calendar year, describe contextual factors that contribute to physical activity fluctuations (e.g., climate/weather, degree of structure, family socio-economic status, and safety), and systematically review research on summertime physical activity interventions to determine key elements of successful interventions for elementary school-aged children. Finally, Katherine Arlinghaus will describe a scoping review of the literature on how individual variation has been included as an intervention evaluation metric of school-based obesity interventions among adolescents. Dr. Amy Bohnert will serve as the discussant and will tie together themes from the three systematic reviews and suggest directions for future research across developmental stages and environmental contexts.

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EXAMINATION OF THE IMPLEMENTATION OF OBESITY PREVENTION INTERVENTIONS IN EARLY CHILDCARE/EDUCATION SETTINGS: A SYSTEMATIC REVIEW USING THE RE-AIM FRAMEWORK

Jen Sanchez-Flack, PhD, MPH¹, Annie Herman, MA², Joanna Buscemi, PhD³, Angela Kong, PhD, MPH, RD⁴, Alexis Bains, BA⁴, Shaila Strayhorn, PhD, MPH¹, Marian L. Fitzgibbon, PhD¹

¹University of Illinois at Chicago, Chicago, IL; ²DePaul University; ³DePaul University, Chicago, IL; ⁴University of Illinois at Chicago

Background: Previous systematic reviews have examined the efficacy of obesity prevention interventions for children within early childcare/education settings. Often lacking in these reviews is reporting on external validity, which continues to be underemphasized in contrast to internal validity. More attention to external validity would help to better translate evidence-based interventions to real world settings. Our primary aim is to determine the availability of data on both internal and external validity across dimensions of the Reach, Efficacy/Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework in studies reporting on obesity prevention interventions in early childcare/education settings.

Methods: This review used the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. Inclusion criteria included: randomized-controlled trial study design, early childcare/education setting, targeted children 2-6 years old, addressed both diet and physical activity, collected measures of weight status and diet and/or physical activity, and published within the last 10-years. Searches were conducted in ERIC, PsychInfo, and PubMed in July 2019 resulting in 831 articles. Upon completion of title, abstract and full-text screening, 23 studies met the inclusion criteria. A validated RE-AIM abstraction tool was then used to code studies according to which indicators of internal and external validity were reported.

Results: The most commonly reported dimensions were Reach (62.3%), Implementation (53.5%) and Efficacy/Effectiveness (48.7%). Adoption (21.7%) and Maintenance (11.6%) were less often reported. All studies reported on primary outcomes, but few reported on RE-AIM indicators of characteristics of participation (8.7%) and adoption (4.3%), quality of life (13.0%), methods used to identify staff to deliver the intervention (13.0%), staff inclusion/exclusion criteria (8.7%), adoption rates (8.7%), implementation fidelity (26.1%), measures of cost to start-up (0%) and deliver (34.8%) the intervention, and indicators of maintenance (0-34.8%).

Conclusions: This systematic review suggests that more focus is needed on external validity so that evidence-based early childcare/education obesity interventions can be generalized to real-world settings. Recommendations for enhancing reporting and design will be discussed.

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KEEPING KIDS ACTIVE: A SYSTEMATIC REVIEW OF SUMMERTIME INTERVENTIONS TO PROMOTE PHYSICAL ACTIVITY

Elizabeth Rea, B.A.¹, Amy M. Bohnert, Ph.D.², Jenette Moreno, Ph.D.³, Allie Hardin, B.A.⁴¹Loyola University Chicago, Chicago, IL; ²Loyola University Chicago, Evanston, IL; ³USDA/ARS Children's Nutrition Research Center Baylor College of Medicine; ⁴University of Texas, School of Public Health

The number of overweight and obese children has reached unprecedented levels in developed countries across the globe, with recent estimates of 23.8% of boys and 22.6% of girls being overweight or obese. A majority of efforts to address childhood obesity have focused on school year interventions. However, research suggests that children gain a disproportionate amount of weight during summertime when physical activity (PA) may be more limited, particularly for youth with limited access to summertime programming. This study sought to: (1) summarize research on youth's PA patterns across the entire year, (2) consider contextual factors that contribute to PA fluctuations (e.g., climate/weather, degree of structure, family socio-economic status, and safety), and (3) systematically review research on summertime PA interventions in order to determine key elements of successful interventions. Results suggested that summer day camps proved to be successful in keeping children active while they attended camp, and several reported improved fitness outcomes in those who attended. Elements from successful camps include daily, structured opportunities for physical activity and included a wide range of activities, from team games to yoga to dance. Community-level interventions (e.g., VERB Summer Scorecard) also showed some success in physical activity participation while posing physical activity as a fun thing to do with friends. Year-round school was also explored as an option to maintain PA levels, though more research is needed to draw firm conclusions in this area. Recommendations for future researchers include gaining an understanding of barriers to summer day camp participation, accounting for developmental factors, more precise measurement windows, and the need for more follow-up post-intervention to better understand the maintenance of effects over time. In sum, although child overweight and obesity is a complex issue, there is evidence that PA is a modifiable health behavior that can be increased in summertime programs.

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EVALUATING INDIVIDUAL RESPONSE TO SCHOOL-BASED OBESITY INTERVENTIONS

Katherine Arlinghaus, MS, RD, LD¹, Rachel Helbing, MS², Craig A Johnston, PhD²¹University of Houston, Houston, TX; ²University of Houston

Background: Schools serve as a focal point for obesity treatment because children spend almost half their day in school. However, on average, school-based interventions result in only modest short-term improvements in weight outcomes. One reason for this may be due to the considerable individual variation in intervention response. Although tailoring is often discussed as an important intervention strategy, individual variation is not well understood. Traditional methodology for evaluating interventions relies on assessing mean differences in weight outcomes between intervention and control groups over time. While this is an important evaluation metric, it does not consider individual response variation, which may be critical to design more targeted interventions.

Methods: A scoping review of the literature was undertaken to gain a better understanding for how individual variation has been included as an intervention evaluation metric of school-based obesity interventions among adolescents. This review was intended to answer three main questions: 1. How many interventions report response rates as an intervention evaluation metric? 2. How do interventions define response? and 3. Are there common characteristics among interventions that report response rates?

Results: Preliminarily, it appears that few interventions report response rates in the initial evaluation of the intervention. Response rates are more commonly reported regarding maintenance outcomes. Response is primarily defined as the maintenance or decrease of standardized body mass index (zBMI), as a 5-10% improvement, or as a 0.20 decrease in zBMI.

Conclusions: Individual variation is an important issue to consider to improve outcomes of school-based obesity interventions. However, inconsistent definitions for response and a lack of reporting response rates make it difficult to understand which types of interventions meaningfully improve weight outcomes among the greatest number of youth. This is a critical gap to address to make decisions regarding which interventions should be disseminated and to improve how school-based interventions can be better tailored for and targeted to specific populations.

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SLEEP AND ALCOHOL USE ACROSS THE LIFESPAN: A PRESENTATION SUPPORTED BY THE SBM SLEEP SIG

Alyssa T. Brooks, PhD¹, Hannah K. Allen, PhD², Louise Thornton, PhD³¹National Institutes of Health Clinical Center, Bethesda, MD; ²Penn State University, University Park, PA; ³University of Sydney, Sydney, New South Wales, Australia

Alcohol use and sleep disturbance are risk factors for multiple chronic diseases, and both impact health-related quality of life. Often, sleep problems co-occur with alcohol misuse/alcohol use disorder (AUD). This symposium will explore the co-occurrence of alcohol misuse and sleep disturbance across the lifespan – from adolescence through adulthood, among individuals with varying patterns of use.

Presentation 1: Dr. Louise Thornton will present baseline and daily self-monitoring data from a multi-site cluster RCT currently underway across 72 schools in Australia. This presentation will explore the ways in which alcohol use and unhealthy sleep patterns occur and are related among 12-13 year old adolescents. Preliminary results suggests that alcohol use is associated with poorer sleep among this age group.

Presentation 2: Dr. Hannah Allen will present on the age-varying association between sleep and alcohol use disorder across adulthood. This presentation will use NESARC-III data to explore whether the existence and magnitude of the association between AUD and sleep varies by age across adulthood. Results provide evidence that adults ages 30 and older might be more susceptible to sleep problems associated with their heavy alcohol use as compared to younger adults, and that AUD is more strongly related to sleep problems as opposed to sleep duration.

Presentation 3: Finally, Dr. Alyssa Todaro Brooks will present pilot work on feasibility/acceptability of a behavioral sleep intervention (CBT-I) for individuals transitioning out of an inpatient alcohol rehabilitation program informed by qualitative work in the same population. Considerations for implementing behavioral sleep interventions among individuals with AUD will be discussed as well as “lessons learned” from past and ongoing work highlighting the importance of retention, trust, financial considerations, and post-discharge environment (including social support).

These presentations highlight the relationship between sleep and alcohol use across the lifespan. Both sleep and alcohol use are potentially modifiable targets for behavioral intervention. Together, panelists will discuss strategies for measuring and intervening in various populations.

Discussant: Tracy Trevorrow

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THE COMPLEXITY OF TREATING SLEEP DISTURBANCES WITH CO-MORBID PSYCHIATRIC CONDITIONS IN INDIVIDUALS WITH ALCOHOL USE DISORDER: ONE SIZE CAN'T FIT ALL

Alyssa T. Brooks, PhD¹, Ralph Tuason, RN, BSN, CNRN², Mike Krumlauf, RN, BSN², Gwenyth Wallen, PhD, RN²¹National Institutes of Health Clinical Center, Bethesda, MD; ²NIH Clinical Center

Sleep disturbances are common among individuals with alcohol use disorder (AUD) during phases of drinking, withdrawal, recovery and abstinence, and may be associated with relapse. Sleep-related cognitions and behavior should be carefully considered when designing interventions to improve sleep and/or prevent relapse. Based on pilot work on individuals transitioning out of an inpatient alcohol rehabilitation program, qualitative sub-themes based on semi-structured interviews suggested the importance of timing, structure, and delivery of a future behavioral sleep intervention. These interviews as well as extant literature led us to pursue an internet-delivered cognitive behavioral therapy for insomnia (CBT-I) program among individuals with AUD. Phase I (feasibility/acceptability) of this trial is currently in progress and will inform Phase II, a fully powered randomized controlled trial. Preliminary results on feasibility and acceptability highlight the need for careful consideration of common co-morbid psychiatric conditions when establishing inclusion/exclusion criteria to maximize the potential for participant recruitment, engagement, and retention. When designing behavioral sleep interventions for individuals with AUD, researchers and clinicians should consider novel strategies to improve the likelihood of retention, establishing trust, proximity and/or the use of telemedicine to increase convenience, finances, and post-discharge environment (including social support).

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THE AGE-VARYING ASSOCIATION BETWEEN SLEEP AND ALCOHOL USE DISORDER ACROSS ADULTHOOD: AGES 18 TO 65

Hannah K. Allen, PhD¹, Ashley Linden-Carmichael, PhD¹, Stephanie Lanza, PhD¹¹Penn State University, University Park, PA

Background: Sleep disturbance is common among adults meeting criteria for alcohol use disorder (AUD), with frequent, heavy alcohol use negatively affecting the neurotransmitter systems responsible for sleep regulation. While the relationship between AUD and sleep problems is well-established, less is known about whether the existence and magnitude of the association between AUD and various measures of sleep vary by age across adulthood.

Methods: Data are from $n=23,065$ adults ages 18 to 65 (51% male; 66% non-Hispanic white) who participated in the 2012-2013 National Epidemiologic Survey on Alcohol and Related Conditions-III and had consumed alcohol in the past year. Participants reported typical sleep duration in the past 30 days and whether they had experienced problems falling or staying asleep in the past year. The Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 was used to classify participants as meeting DSM-5 criteria for a past-year AUD. Time-varying effect modeling was used to model age trends in sleep duration, sleep problems, and AUD across adulthood, as well as the associations of AUD with sleep outcomes by age. All analyses controlled for sex and race/ethnicity, and a full sample weight was applied to adjust for sampling and nonresponse.

Results: A fifth of alcohol-using participants met criteria for a past-year AUD (21%), with prevalence peaking among 21-year-olds (37%) and declining through age 65 (6%). Participants slept an average of seven hours per night, and 28% reported past-year sleeping problems. Sleep problems increased with age, with a minimum prevalence of 20% among 21-year-olds and a maximum prevalence of 33% among 51-year-olds. Compared to participants not meeting AUD criteria, there was a significantly higher prevalence of sleep problems among participants meeting AUD criteria who were ages 20 to 23 and 30 to 60 years. There were no significant associations found between AUD and sleep duration at any age.

Conclusions: While the prevalence of AUD steadily declined with age, the significance of the association between AUD and sleep problems varied across adulthood. Findings highlight age groups that might be more susceptible to sleep problems associated with their heavy alcohol use, particularly adults ages 30 years and older. Efforts to prevent problematic alcohol use in young adulthood that extend into the later 20s and early 30s might help to protect against alcohol-related sleep problems later in adulthood.

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ALCOHOL USE AND UNHEALTHY SLEEP AMONG AUSTRALIAN ADOLESCENTS AGED 12-13

Louise Thornton, PhD¹, Katrina Champion, PhD², Matthew Sunderland, PhD³, Maree Teesson, PhD³, Nicola Newton, PhD³, Frances Kay-Lambkin, PhD⁴, Cath Chapman, PhD³, Tim Slade, PhD³, Katherine Mills, PhD³, Lauren Gardner, PhD³, Health4Life Team³

¹University of Sydney, Sydney, New South Wales, Australia; ²University of Sydney; ³The Matilda Centre for Research Excellence in Mental Health and Substance Use, University of Sydney, Sydney, Australia; ⁴School of Medicine and Public Health, The University of Newcastle, Australia, Waratah, New South Wales, Australia

Background: Alcohol use and unhealthy sleep have been identified as key lifestyle risk factors for chronic disease. Both of these risk factors emerge during adolescence, commonly co-occur, and track into adulthood. The current study aims to understand associations between alcohol use and unhealthy sleep patterns among adolescents aged 12-13 years old.

Methods: The Health4Life Initiative is a multi-site cluster randomised controlled trial (RCT) currently underway in 72 schools across Australia. Schools are randomised to receive health education as usual or 'Health4Life' - an eHealth school-based prevention program and accompanying smartphone app concurrently targeting alcohol use, unhealthy sleep, and 4 other key health behaviours. The Health4Life app allows students to record their health behaviours (including alcohol use and sleep) daily, set goals and view progress over time. All students complete online assessments regarding their health behaviours (including alcohol use and sleep patterns). This presentation will use baseline data ($n \approx 7200$) to investigate the proportion of participating students reporting alcohol use and unhealthy sleep patterns and if sleep patterns differ between those students reporting current alcohol use and those not reporting it. Among students using the Health4Life app, we will also investigate patterns of reported alcohol and sleep behaviours over time and how these two behaviours may interact in this population.

Results: This presentation will describe the Health4Life initiative, cluster RCT, and patterns of alcohol use and sleep behaviours of participating students. To date more than 3700 students have completed their baseline assessment, with data collection to be completed in November 2019. Preliminary results based on this initial sample indicate 51.5% of students have had a sip of alcohol, 4.2% have ever had a full standard drink of alcohol and 2.3% have had a full standard drink in the past 6 months. These students scored an average of 18.8 ($SD=6.4$) on the Paediatric daytime sleepiness scale (PDSS), indicating excessive daytime sleepiness in this group. Their scores on the PDSS were also significantly worse than those of students who did not reporting drinking in the last 6 months ($M=13.7$ ($SD=5.9$), $F(1,3520)=58.06$, $p > .001$).

Conclusion: The Health4Life Initiative presents a unique opportunity to gather detailed information about alcohol use and sleep patterns from a large sample of adolescents. Preliminary results indicate alcohol use and poor sleep co-occur within this population. Final results will have the potential to improve our understanding of the ways in which alcohol use and sleep are related in this vulnerable age group and inform the development of effective prevention programs.

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THE PROCESSES UNDERLYING PHYSICAL ACTIVITY HABIT FORMATION

Jaclyn P. Maher, Ph.D.¹, Amanda L. Rebar, PhD², Kimberly R. More, MSc³, Ryan E. Rhodes, Ph.D.⁴¹University of North Carolina at Greensboro, Greensboro, NC; ²Central Queensland University, Cooe Bay, Queensland, Australia; ³Iowa State University, Ames, IA; ⁴University of Victoria, Victoria, BC, Canada

Contemporary health behavior theories have almost exclusively focused on the role that conscious regulatory processes such as plans, beliefs, and expected value play in regulating physical activity behavior. Although evidence suggests that manipulating these factors can, in part, change behavior, health behaviors are often resistant to attempts to change them. Accumulating evidence suggests that habit, a non-conscious process, plays a role in regulating physical activity behavior even after accounting for more conscious regulatory processes. Habits develop through the repeated pairing of a contextual cue and a behavioral response so that, over time, encountering the cue automatically elicits an impulse to engage in the behavioral response. As a result, habits are well-learned, automatic, and context-dependent influences on behavior. Given that habits are hypothesized to be less resistant to lapses in motivation due to limited reliance on conscious processing, habit formation likely represents an essential part of sustained physical activity engagement. Therefore, understanding the mechanisms underlying physical activity habit formation is critical to effective physical activity promotion efforts. The presentations in this symposium will draw on observational and experimental data to elucidate the processes underlying physical activity habit formation. The first presentation will present intensive data collected through ecological momentary assessment to empirically test the theoretical propositions that habit strength for physical activity and sedentary behavior should be associated with degree of context-stability of those behaviors among older adults. The second presentation will present evidence tracking physical activity habit strength monthly for six months during and following an 8-week exercise rehabilitation program designed for cardiovascular and pulmonary disease patients. The third presentation will present on the relative role of context stability and exercise identity in habit formation within a randomized controlled trial designed to promote brisk walking habits among sedentary women. Overall, these presentations will provide important insights into physical activity habit formation among low active populations. The discussant will address both the specific contributions of these presentations and the broader implications of promoting physical activity habits and the integration of habits in theory refinement.

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THE INFLUENCE OF CONTENT STABILITY ON PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR HABIT STRENGTH AND BEHAVIOR: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

Jaclyn P. Maher, Ph.D.¹, Genevieve F. Dunton, PhD, MPH², Amanda L. Rebar, PhD³¹University of North Carolina at Greensboro, Greensboro, NC; ²University of Southern California, Los Angeles, CA; ³Central Queensland University, Cooe Bay, Queensland, Australia

Background: Habits develop through cue-behavior associations learned over time as a result of repeated pairings of a contextual cue (i.e., time of day, physical location, surrounding people) with a rewarding behavioral response. Therefore, the degree of stability in contexts in which physical activity (PA) or sedentary behavior (SB) is engaged may have important motivation implications; yet, research investigating the specific contexts of an individual's PA or SB as it pertains to health behavior habits is lacking. This study used ecological momentary assessment (EMA) to empirically test the theoretical propositions that habit strength for and level of PA and SB should be associated with degree of context-stability of those behaviors.

Methods: Older adults (N=104) completed a 10-day EMA protocol. Participants answered 6 EMA prompts/day to assess current behavior as well as social (e.g., alone, with spouse/partner, with friend) and physical (e.g., at home, park, store) contexts of behavior. Day (weekday, weekend day) and time (e.g., morning, afternoon, evening) stamps of EMA questionnaires provided temporal context data. Behavioral context stability was calculated as the reversed entropy scores of the social, physical, and temporal contexts of PA and SB weighted for total frequency of context prompts. Greater entropy indicated greater heterogeneity of contexts. Habit strength for PA and SB were assessed by questionnaire prior to beginning the EMA protocol. An ActiPal monitor was worn continuously to assess average daily time spent in moderate-vigorous PA (MVPA), light PA, SB, and number of sit-to-stand transitions. Habit strength or behaviors was regressed onto context stability and total frequency scores.

Results: Social context stability was positively associated with MVPA ($\beta = .43$); people engaged in more MVPA if they tend to be around the same types of people when active. Physical context stability was negatively associated with sit-to-stand transitions ($\beta = -.23$); people tended to transition from sitting less often if they sat in more variable locations. No context stability scores predicted light PA, SB or PA or SB habit strength.

Conclusions: Although context stability was related to behavior, this did not appear to be explained by habit, as habit strength did not differ by the degree of context stability surrounding bouts of PA or SB. Further research is necessary to determine the extent to which context stability is associated with the formation and maintenance of health behavior habits.

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HOW EXERCISE REHABILITATION PROGRAMS IMPACT PHYSICAL ACTIVITY HABITS AMONGST CARDIOVASCULAR AND PULMONARY DISEASE PATIENTS

Amanda L. Rebar, PhD¹, Kristy-Lee Alfrey, BS², Benjamin Gardner, PhD³, Christopher Askew, PhD⁴, Corneel Vandelaotie, PhD², Jenni Judd, PhD²

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Heart and lung disease are among the leading causes of death and strain on healthcare resources globally. Physical activity is an instrumental aspect of rehabilitation and relapse prevention. Following hospitalization or diagnosis, some patients are referred to gym- or hospital-based physical activity rehabilitation programs; however, the programs typically only last between 2-3 months. Habits are theorized to form gradually and, once established, persist over time, thereby resulting in long-term behavior change. To increase the number of patients who continue regular activity following rehabilitation, we need to understand how rehabilitation programs impact habit for physical activity, both in terms of rehabilitation exercise and lifestyle physical activity. Habits are automatic behavioral tendencies, or urges to act, activated by learned mental associations of cues and responses. Being physically active out of habit is a different psychological process than being active out of volition and self-control, with habit being more resistant to lapses in motivation and more likely to be sustained long-term. Tracking physical activity habit formation of patients participating in an exercise rehabilitation program will provide important insight into how rehabilitation could be restructured to most effectively help people form long-term physical activity habits.

Habit for both rehabilitation exercise and lifestyle physical activity of 33 rehabilitation patients were tracked monthly for six months during and following an 8-week rehabilitation program. Patients reported strong habit for rehabilitation exercise throughout the program ($M = 5.59$, $SD = 1.40$) and the trajectory of habit formation was flat, which is atypical of habit formation trajectories shown in other studies for lifestyle health behaviors. People's habit for lifestyle physical activity was comparatively much weaker than their habit for rehabilitation exercise ($M \Delta 95\% \text{ CI: } -2.25 \text{ to } -1.62$). Multilevel modelling revealed that people's habit strength for lifestyle physical activity was significantly stronger during the time of the rehabilitation program ($95\% \text{ CI: } 0.21 \text{ to } 1.04$) compared to before the program; but dropped off again following program completion ($95\% \text{ CI: } -0.60 \text{ to } 0.64$).

In-clinic exercise rehabilitation programs may not translate into lifestyle physical activity habits, and therefore long-term behavior change is unlikely. Additionally, these findings call into question habit theory tenets such as how habits form and whether they generalize beyond a specific context. More is needed to understand how habits play out in rehabilitation programs and the theoretical implications of understanding habit in this context before establishing whether integrating habit behavior change techniques within existing exercise rehabilitation programs will be beneficial.

3

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THE ROLE OF CONTEXT STABILITY AND EXERCISE IDENTITY IN HABIT FORMATION

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Regular exercise prevents chronic illness and is important for disease management, yet few adults are able to maintain a regular regimen. Interventions that target exercise maintenance focus on habit development via action planning which attempts to link cues and behavior until the association becomes automatic (i.e., habit). For complex behaviours (e.g., exercise), which require a substantial amount of time and physical exertion, the effectiveness of planning interventions may be improved upon; that is, having a stable context for exercise may not be sufficient for habit to form. The present study examined the relative role of context stability and exercise identity as factors in habit formation using a novel methodology called Necessary Condition Analysis (NCA).

Data from the present study are from a randomized controlled experiment that tested four strategies (including control) for forming a brisk-walking habit in sedentary young women ($N = 175$; $\text{Mage} = 19.14$, $\text{SDage} = 1.58$). Participants' context stability was measured at baseline and their identity and habit strength for exercising were measured one month post intervention. Physical activity was measured using self-report and FitBits. Across conditions, we tested the hypothesis that both context stability and identity would be necessary-but-not-sufficient conditions for habit development.

The hypothesis was tested using NCA and multiple regression analysis. Participants were removed from analyses if they failed any random response check. Neither daily nor weekly context stability were necessary-but-not-sufficient conditions for habit development, nor did they predict habit using regression ($ps > .05$). Identity was a weak necessary-but-not-sufficient condition for habit development ($d = .026$, $p = .014$). Thus, those with weak identities did not develop strong habits. Additionally, identity predicted habit development using regression ($\beta = .41$, $p < .001$).

Context stability may be less important for habit development than forming a strong exercise identity. However, future research should evaluate these relationships with more in-depth measures of context stability, with objective measures of habit strength, and with additional types of physical activity. That is, identity may be more important for habit formation for other - less commonly practiced - types of physical activity. In conclusion, targeting identity formation may promote habit.

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DHC PRESENTS: USING THE DESIGN SPRINT METHODOLOGY TO DEVELOP DIGITAL HEALTH TOOLS--THREE CASE STUDIES

Danielle E. Jake-Schoffman, PhD¹, Valerie Silfee, PhD², Katrina Mateo, MPH, PhD candidate³, Andrew Onda, MBA², Megan A. McVay, PhD¹¹University of Florida, Gainesville, FL; ²UPMC Health Plan, Pittsburgh, PA; ³Healthcare Innovation Technology Lab (HITLAB), New York, NY

The design and implementation of digital tools in the context of multilevel behavioral interventions pose numerous decision points and challenges for development teams. Unfortunately, this process is often full of delays and can sometimes lead to a late start to a program or having to use a digital tool with limited pilot data. The Design Sprint process, designed by the Google Ventures team, provides a framework through which teams undertake a five-day problem solving process, engineered to push the team through roadblocks and stimulate creative thinking. The process has since been used in a variety of settings with success, including both academic and industry teams. In this symposium, we will present three case studies of the use of the Design Sprint methodology to iterate health technology tools, including modifications to the procedures, lessons learned, and the value add of undertaking this ambitious process. We will begin with an overview of the original Design Sprint process as laid out by the Google Ventures team. The first case study is an example of the process as conducted through the digital behavioral unit of an integrated health care delivery system, to build a digital health coaching dashboard prototype. In this example, the team maintained high fidelity to the original Design Sprint methodology, including all steps and timeline as suggested. The second case study is an example of the process as conducted by team of academic researchers in an allied health department, to build a digital patient-facing facilitation guide and an initial implementation plan for a behavioral weight loss study. In this example, the team modified the Design Sprint methodology to accommodate academic schedules and university regulations, including fitting within 2.5 days and conducting formative data collection outside the sprint period. The third case study is an example of the process as conducted at a digital health innovation company to build a design prototype of a digital goal-setting platform for stress management. In this example, the team conducted an accelerated 2-day Design Sprint followed by four rounds of user-testing of the prototype, each including a process of rapid review and prioritization of user feedback and redeployment of the prototype with revisions. Finally, the discussant, an expert in the execution of Design Sprints, will provide a summary of the case studies and lead a conversation about the considerations for using the process to develop and iterate digital health products in a variety of research and practice settings.

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USING AN ADAPTED DESIGN SPRINT METHODOLOGY TO INCREASE SPEED AND CREATIVITY DURING DEVELOPMENT OF A WEB-BASED TOOL AND IMPLEMENTATION STRATEGY

Danielle E. Jake-Schoffman, PhD¹, Megan A. McVay, PhD¹, Marissa Donahue, MA²¹University of Florida, Gainesville, FL; ²University of Florida

While obesity is present in nearly 40% of US adults, few people have access to formal weight loss treatment. Freely available weight loss apps that include tracking and social networks have high potential for promoting weight loss. However, few people currently use these tools, and those who use them tend to be healthier than those who do not. The context of a primary care appointment is ideal to encourage the use of freely available tools, as it leverages the heightened interest in making health changes and influence of the primary care provider to encourage initiation of new health behaviors. However, tools to support this initiation of weight loss are not widely available. Thus, the objective of this project was to develop a patient-facing guide ("facilitation guide") to motivate use of freely available online weight loss tools, and an implementation strategy to integrate this guide into the clinical encounters around a primary care appointment.

As part of a systematic intervention development process, team members developed the patient-facing facilitation guide and an initial implementation plan using a modified version of the Design Sprint process (Google Ventures). Team members were the Co-PIs of the project and the research coordinator. The Design Sprint process was modified to accommodate academic schedules and IRB regulations, including shortening to 2.5 days across a week (vs. original 5 days) of group work with additional research conducted after hours; substituting some suggested steps (e.g., "Ask the Experts" conducted through scientific literature reviews); and skipping other steps altogether (e.g., using a "Straw Poll" to inform decisions). Other tasks were implemented with fidelity to the Design Sprint protocol (e.g., "How Might We" note taking procedures to identify key objectives, "Lightening Demos" to learn from existing products, "Crazy 8" sketches to generate/refine intervention ideas). Following the initial sprint week, the team took several additional steps. First, the outline of the tool was further iterated into a full clickable prototype (created in PowerPoint). Second, the prototype and semi-structured interview guides were submitted for IRB approval. Third, with approval secured, the team gathered feedback on the prototype and the implementation plan through a series of qualitative interviews with n=4 primary care providers and n=12 patients with obesity.

Overall, the Design Sprint process fostered creativity and out-of-the-box thinking, leading to innovations in the products designed. It encouraged the team to make difficult decisions about the products in an abbreviated period of time, ultimately eliminating "sticking points" that typically stall progress for days or weeks, thus accelerating the design process. Details of adaptations to the Design Sprint methodology and suggestions for researchers to tailor the process to their projects will be shared.

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SPRINTING TOWARDS IMPROVED HEALTH: A GOOGLE DESIGN SPRINT PROCESS TO BUILD A HEALTH COACHING DASHBOARD

Valerie Silfee, PhD¹, Nicole Beswick, MS, NBC-HWC², Christianne Johnson, MA², Alexa Pavlick, BA³, Bethany Tillilie, MBA², Fatma Uyar Morency, PhD², Ja-Way Wang, BSBA², Brandon Zepeda, MII-PS², Andrew Onda, MBA¹

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As digital health behavior interventions continue to grow, more and more people are getting access to digital programs and apps they need to prevent and manage chronic conditions. However, research has shown that a digital tool alone is not sufficient to change behavior. Human interaction is critical, and health coaches are an important asset to be able to positively move individuals through the behavior change process. Unfortunately, there are many barriers to health coaching in an applied setting including documentation, scheduling communications, understanding participants' health history, and monitoring progress. Therefore, the goal of this project was to develop a digital coaching dashboard that would eliminate barriers faced by health coaches, in order to improve or maintain Health Plan members' perceived health and well-being.

Members of the UPMC Health Plan Behavioral Unit for Digitally Delivered Interventions (BUDDI) participated in a five-day Design Sprint, following the process developed and perfected by Jake Knapp of Google Ventures. We specifically sought to understand what information is necessary to effectively coach, how to create an intuitive dashboard, and the extent to which health coaches trust suggestions from emerging technology. The Design Sprint process was followed exactly as outlined and facilitated by a separate Experience Strategy team at UPMC. The core team was made up of seven individuals, including behavioral scientists, health coaches, product managers, data analysts, and experience and UX designers. The team followed the five-day process by mapping the problem (Monday), sketching solutions (Tuesday), choosing the strongest sketches (Wednesday), building a realistic prototype (Thursday), and testing the prototype with five UPMC Health Plan behavioral health and lifestyle health coaches (Friday). Protocol activities included but were not limited to "Asking the Experts" to gain insights to the problem, "Lightning Demos" to review solutions from other industries, and a "Structured Critique" of each other's sketches. We also generated a coaching dashboard prototype along with answers to our core questions and key findings and themes from the testing with five UPMC behavioral health and lifestyle health coaches.

Those attending this session will obtain a deeper understanding of the Design Sprint methodology and how this process uses a step-by-step checklist to move a challenge from a problem to a tested solution in five days.

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USING AN ACCELERATED DESIGN SPRINT AND RAPID MODIFICATION/REDEPLOYMENT METHODOLOGY TO DEVELOP A DESIGN PROTOTYPE OF A DIGITAL BEHAVIOR CHANGE TECHNIQUE TOOL FOR STRESS MANAGEMENT

Katrina Mateo, MPH, PhD candidate¹, Frank Fries, MS², Silky Kadakia, MA², Stan Kachnowski, PhD, MPA¹

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Behavior change interventions typically contain multiple behavior change techniques (BCTs) that, if enacted appropriately, are likely to effect a desired change. However, BCT effectiveness can depend on how they are delivered and whether user engagement is sustained, both with the delivery platform (e.g. in-person, digital) and the BCT.

As part of a larger effort to translate optimized prototypes of BCTs into health behavior change products, a design prototype of a digital goal-setting platform for stress management that integrates five key BCTs related to goal setting was developed by: 1) using an accelerated design sprint methodology to create an initial prototype, and 2) conducting iterative user-testing with rapid execution and redeployment of modifications to the user interface/user experience (UI/UX).

A 2-day design sprint (an accelerated design workshop that aims to define goals, validate assumptions, and design the initial UX for a new product) was held with digital health researchers, behavioral scientists, a UX designer, and product developer. Based on workshop outcomes, a sketch concept, user flow framework, and testing calendar was developed (2 weeks). After initial development and internal review/refinement of the design prototype (5 weeks), four rounds of user-testing (navigating clickable UX "flows") with post-interview data collection was conducted with 17 participants (mean age 36.8 years [range 22-64 years], 82% female, English-speaking, interested in behavior change around stress management). Each round was followed by rapid review and prioritization of user feedback, and iterative prototype updates prior to the next testing round. After user-testing (7 weeks), a content analysis of data identified common themes/patterns related to UI/UX preferences, challenges, acceptability, and overall value, which guided final refinements and recommendations for next steps.

Three user "flows" and related content were developed for the design prototype: Flow 1 for a first-time user (i.e. welcome screen, assessment questions, goal setting, creating a plan, main menu options); Flow 2 for an active/regular user (i.e. personal tracking of daily progress); and Flow 3 for a user returning after a hiatus (i.e. problem identification, goal/plan adjustment). Users liked the overall UI/UX describing the design prototype as more comprehensive and easier to use than other digital health tools. Users wanted more goal specificity and personalization, and also suggested a range of improvements to the UI/UX and content, as well as additional features to better guide, support, and engage users.

This project completed in under 5 months demonstrates the utility of using a design sprint and iterative user-testing and modification redeployment methodology to develop design prototypes for digital behavior change platforms.

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DESIGNING RESEARCH TO TEST MECHANISMS UNDERLYING BEHAVIOR CHANGE: THE NIH SCIENCE OF BEHAVIOR CHANGE INITIATIVE

Talea Cornelius, PhD, MSW¹, Jun Ma, MD, PHD², Erica Sciolli, Ph.D.³, Bonnie Spring, PhD⁴, Jonathan W. King, PhD⁵¹Columbia University Irving Medical Center, New York, NY; ²University of Illinois at Chicago, Chicago, IL; ³VA Boston Healthcare System, Boston, MA; ⁴Northwestern University Feinberg School of Medicine, CHICAGO, IL; ⁵National Institute on Aging / NIH, Bethesda, MD

Long-term behavior change to promote health and longevity is difficult. Behavior-change interventions are inconsistent; when successful, we rarely know why or how they work. The NIH Common Fund's Science Of Behavior Change (SOBC) program aims to revolutionize behavior change research by using an experimental medicine approach to identify and engage mechanisms of behavior change. This method promotes a unified science to advance the field to create more effective behavioral interventions. In brief, the experimental medicine approach comprises four basic steps: (1) identify a potential mechanism of behavior change, (2) measure the hypothesized mechanism using validated instruments, (3) intervene and demonstrate that the mechanism has been influenced, and (4) observe whether influencing the mechanism results in subsequent behavior change. This is akin to testing a mediation model within a randomized control trial.

The SOBC network began in 2015 with eight teams tasked with identifying, measuring, and influencing a mechanism of behavior change with relevance to health regimen adherence more broadly. Initially, these teams worked to develop and validate assays to measure hypothesized mechanisms underlying behavior across three domains: self-regulation, stress, and interpersonal processes (UH2 phase). Currently, six of these teams are in the process of testing whether mechanism change results in behavior change (UH3 phase). The network has also recently expanded to include 13 R21/R01 revisions applying the experimental medicine approach. This phase of SOBC, in which mechanism change is linked to behavioral outcomes, brings associated challenges regarding measurement and trial design. Results from UH3 studies will ultimately lead to a deeper understanding of why interventions succeed—or, why they do not.

This symposium provides a brief overview of the SOBC steps and history (presented by Dr. Talea Cornelius, a member of the SOBC resource and coordinating center), complemented by a presentation from Dr. Jun Ma, a SOBC network member currently working to validate hypothesized mechanisms of behavior change (i.e., brain circuits implicated in emotion, cognition, and self-focused reflection) underlying weight loss. Dr. Erica Sciolli, a new SOBC member, will discuss the incorporation of neurological mechanisms into her research examining the impact of progressive exercise training on chronic pain, depression, and PTSD. Dr. Bonnie Spring will present a systematic meta-review of interventions targeting self-regulatory mechanisms of change and the association of these techniques with weight loss, eating, and physical activity outcomes, and will discuss some of the challenges associated with designing studies to test mechanisms of behavior change. Finally, Dr. Jonathan King will present the NIH perspective on funding for intervention research informed by the SOBC approach

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ENGAGING SELF-REGULATION TARGETS TO UNDERSTAND THE MECHANISMS OF BEHAVIOR CHANGE AND IMPROVE MOOD AND WEIGHT OUTCOMES: THE ENGAGE PROJECT

Jun Ma, MD, PHD¹¹University of Illinois at Chicago, Chicago, IL

Despite new evidence for effective integrated behavior therapy for treating comorbid obesity and depression, the underlying mechanisms remain unknown. This lack of understanding significantly hampers efforts to optimize the efficacy of behavioral interventions and limits their implementation. The 2-phased ENGAGE project innovatively integrates sophisticated mechanistic studies with rigorous investigation of behavioral treatment effects in randomized clinical trials (RCTs) of patients with obesity and depression. Leveraging the latest advances in transdisciplinary basic sciences, the ENGAGE project exemplifies an experimental medicine approach by focusing on changes in large-scale brain circuits (in both phases) and the gut microbiome and proinflammatory cytokines (in phase 2) to elucidate potential mechanisms along the microbiome-gut-brain axis underlying integrated behavior therapy for obesity and depression. This integrated therapy with demonstrated effectiveness in a recently JAMA-published RCT, combines 2 nationally recognized behavioral interventions: problem solving therapy with as-needed intensification of pharmacotherapy for depression and standard behavioral weight loss treatment. Embedded within this RCT, the now completed phase 1 of the ENGAGE project was a discovery study among a subset of the parent trial sample (n=108) to explore whether and how a priori-defined brain circuits—namely, target circuits—subserving emotion, cognition, and self-focused reflection mediated treatment effects on health behavior changes as well as weight loss and depression outcomes. Phase 2 is actively recruiting (target n=105) for a replication study designed to examine the same target brain circuits in a geographically and socioeconomically different sample randomized to receive an enhanced version of the integrated behavior therapy. Additionally, stool and blood specimens are collected for microbiome and cytokine analyses because, based on emerging data, modification of the microbiota-gut-brain axis via the integrated behavior therapy is a plausible, transdiagnostic mechanism affecting treatment adherence and response. In line with the Society of Behavioral Medicine 41st annual meeting theme of “Finding Innovative Solutions for Tomorrow's Health Challenges,” we will present main results from phase 1 and discuss lessons learned from both phases to implement a mechanisms-focused, experimental medicine approach in novel behavior change intervention research.

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NEUROBIOLOGICAL MEDIATORS OF SELF-REGULATORY AND REWARD-BASED MOTIVATIONAL PREDICTORS OF EXERCISE MAINTENANCE IN CHRONIC PAIN AND PTSD: AN EXPLORATORY PILOT STUDY

Erica Scioli, Ph.D.¹, James Whitworth, Ph.D.², Michael Esterman, Ph.D.², Sunny Dutra, Ph.D.³, Kristina Bogdan, BS², Alex Eld, BS⁴, Ann Rasmusson, MD²

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This study will use the Science of Behavior Change (SOBC) experimental medicine approach to compare the effects of a 3-month, individually prescribed progressive exercise training program on neurobiological and related neuropsychological mechanisms by which our exercise-training paradigm may foster exercise maintenance. More specifically, we will investigate hypothesized relationships between exercise-training associated augmentation of neuropeptide Y (NPY) system function and improvements in putative mechanisms: reward sensitivity and self-regulation, neuropsychological capacities posited to underlie self-efficacy and intrinsic motivation, which have been shown to predict exercise maintenance. This study will focus on Veterans with chronic low back pain (cLBP) and posttraumatic stress disorder (PTSD). It includes a baseline, acute, cardiopulmonary exercise assessment (CPX) that will inform the exercise prescription for a 12-week progressive exercise training program, comprised of three 45-minute aerobic exercise sessions per week (walking or running). All exercise sessions will be supervised by an exercise physiologist in the Clinical Studies Unit at the VA Boston Healthcare System. Intermittent telephone calls by the researchers will provide additional motivational support and problem solving. Implementation of the prescribed exercise regimen will be supported by use of heart rate and actigraph monitors programmed to help the participants achieve their prescribed heart rate range. A “midpoint” (week 6) and “endpoint” (week 13) CPX assessment will track changes in NPY system function and delineate relationships to the putative mechanisms proposed to foster exercise maintenance. All three CPX tests will be performed in accordance with guidelines published by the American College of Cardiology. We hypothesize that the capacity to release NPY in response to vigorous exercise (i.e., during CPX) will be associated with improvements in reward sensitivity and self-regulation, which will in turn be associated with self-efficacy and intrinsic motivation to foster exercise maintenance. To have sufficient power to test these hypotheses, 70 participants will be randomized to either the “active exercise training condition” or to a “wait list symptom monitoring condition”. Data from this R21 will be used to demonstrate feasibility and inform the further development of individually prescribed, motivationally based exercise regimens to reduce the negative consequences of these disorders over the long-term. In addition to a description of how this study illustrates the SOBC’s recommended experimental medicine approach, an update on study progress will be presented along with a discussion of challenges in implementing mechanisms-based research supported by an exploratory R21 award.

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SELF-REGULATORY BEHAVIOR CHANGE TECHNIQUES TO PROMOTE WEIGHT LOSS, HEALTHY EATING, AND PHYSICAL ACTIVITY: A META-REVIEW

Bonnie Spring, PhD¹, Katrina Champion, PhD², Rebecca Acabchuk, PhD³, Emily Hennessy, PhD⁴

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Poor quality diet, physical inactivity, and obesity are the most prevalent behavioral risk factors for chronic disease. They are also covariant, suggesting that behavior change techniques (BCTs) that effectively change one risk factor might also improve other diet, activity, and weight outcomes, enhancing intervention efficiency. To examine that question, this registered meta-review, (CRD42019128444), synthesized evidence from 30 meta-analyses published between 2007 and 2017 aggregating data from 409,185 participants to evaluate whether inclusion of 14 self-regulatory BCTs in health promotion interventions was associated with greater improvements in outcomes. Study populations and review quality varied, with minimal overlap among summarized studies. AMSTAR-2 ratings averaged 37.31% ($SD = 16.21\%$; range 8.33-75%). All BCTs were examined in at least one meta-analysis; goal setting and self-monitoring were evaluated in 18 and 20 reviews, respectively. No BCT was consistently related to improved outcomes. Although results might indicate that BCTs fail to benefit diet and activity self-regulation, we suggest that a Type 2 error is more plausible, reflecting methodological limitations: population heterogeneity, insufficient intervention fidelity, and failure to evaluate BCT effects on outcomes experimentally. An understanding of independent and interactive effects of individual BCTs on different health outcomes and populations is needed urgently to ground a cumulative science of behavior change.

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THE NIH SCIENCE OF BEHAVIOR CHANGE COMMON FUND PROGRAM: WHY, WHAT, AND WHEN?

Jonathan W. King, PhD¹

¹National Institute on Aging / NIH, Bethesda, MD

The goal of the NIH Science of Behavior Change (SOBC) Common Fund Program has been to transform behavioral intervention designs by fostering and encouraging the development of an experimental medicine approach to behavior change research. This experimental medicine approach requires us to focus first on hypothesizing specific intervention targets (mechanisms of change) and demonstrating first that one can measure the activity of the target mechanism; second that one can design a manipulation that changes the level of activity of the target mechanism; and third that a proposed intervention changes both the activity of the target mechanism as well as the behavior in which one is seeking change. In this way, it seeks to unify the basic and translational science approaches to behavior change as well as increasing our understanding of *how* interventions work to change behavior, which could lead us to find ways to optimize those interventions and/or determine what types of people they would be most suitable for and what moderating factors might need to be taken into account. This presentation will give a brief history of SOBC including the rationale for the adoption of the experimental medicine approach to behavior change and a discussion of where there may be the greatest future opportunities for progress using the methods and tools developed by the program.

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DREAM OR REALITY: CAN NEW TECHNOLOGIES REALLY DELIVER TAILORED, EFFECTIVE BEHAVIOURAL MEDICINE INTERVENTIONS TO POPULATIONS?

Brian Oldenburg, BSc, MPsychol, PhD¹, Craig B. Taylor, MD², Enying Gong, MSc¹, Andrea K. Graham, PhD³

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With the rapid development of digital technology, this has opened up new opportunities and possibilities for improving health outcomes in populations. However, there are many challenges in optimizing the impact of such interventions at the population level, including the difficulty in reaching vulnerable populations, lack of engagement and suboptimal program use, as well as study design and measurement issues. This requires the application of new user-centered design and research approaches to optimize the delivery of effective digital interventions for defined populations. In this symposium, the presenters will describe recent research trials from different countries, their findings and learnings for advancing the new field of digital public health. Ms Gong will describe how a digitally-enabled intervention was able to reach and impact on vulnerable stroke patients in rural China, thereby demonstrating the effectiveness of the intervention in empowering both providers and patients. Dr. Taylor will describe a new model - Prevalence Reduction Through Outcome Optimization (PRTOO) - that uses prevalence, risk, reach, outcome, uptake, engagement and client/stakeholder input data, all continuously monitored, to inform prevention and intervention decisions. Dr. Oldenburg will describe how recent digital interventions using interactive voice recognition and speech have been able to improve chronic disease self-management by creating high levels of engagement. Each presenter will describe the issues related to intervention reach, engagement and outcomes. The discussant will reflect on the learnings from these three presentations and how the outcomes from digital interventions can be improved in the future.

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DIGITAL TECHNOLOGY TO TRANSFORM CURRENT APPROACHES TO CHRONIC DISEASE MANAGEMENT IN POPULATIONS

Brian Oldenburg, BSc, MPsychol, PhD¹, Dominique Bird, PhD², Shaira Baptista, PhD Candidate³, Greg Wadley, PhD⁴, Jane Speight, PhD⁵, Paul Scuffham, PhD⁶

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While many mhealth programs and digital technologies (interactive digital technology, iDT) are now widely available and at least some have been shown to help individuals monitor and improve lifestyle behaviors and improve clinical outcomes relevant to chronic disease management, it is still unclear how iDT can be rigorously optimized to engage large numbers of users in purposeful prevention and/or routine chronic disease management. Critical steps for population-level impact include: (1) optimizing the user experience to significantly increase the long term impact and widespread use of iDT; (2) data linkage, interoperability of platforms and systems integration to enhance their utility and scalability; (3) producing frameworks, guidelines and business models to enable widespread uptake and adoption of safe and effective iDT by consumers, health practitioners and health services. We have been involved with a series of 5 randomized trials published in the last 15 years that have demonstrated high levels of engagement with telehealth and voice-delivered programs as well as effectiveness in terms of clinical, behavioral, quality of life and economic outcomes. (1) The Logan Healthy Living program evaluated a phone-delivered physical activity and dietary behaviour intervention for primary care patients with type 2 diabetes or hypertension. (2) The ProActive Heart Program evaluated a phone-delivered secondary prevention intervention for myocardial infarction patients. (3) The MoodCare Program evaluated a phone-delivered coaching intervention for ACS patients with depression. (4) The TLC Diabetes Program evaluated an automated, interactive telephone intervention to improve type 2 diabetes management. (5) Most recently, the My Diabetes Coach Program has evaluated a mhealth program involving "conversation" with an embodied conversational agent to improve type 2 diabetes management. Good levels of engagement and improved health outcomes and cost effectiveness are comparable between our trials of human-delivered telehealth (Trials 1-3) and automated conversational delivery (Trials 4-5). Recently available smart voice assistants at home or on people's mobile devices can now be used to help people with a variety of chronic conditions with information, guidance and coaching. The advent of this new technology provides tremendous potential to deliver conversational programs at scale with good reach, engagement, effectiveness and cost-effectiveness.

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USING DIGITAL TECHNOLOGY TO REDUCE THE PREVALENCE OF DISORDERS IN POPULATIONS: TIME FOR A NEW APPROACH

Craig B. Taylor, MD¹, Andrea K. Graham, PhD², Ellen Fitzsimmons-Craft, PhD³, Brian Oldenburg, BSc, MPsychol, PhD⁴

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Advances in digital technology, including the almost ubiquitous access to smart devices, social media and smart wearables, combined with increasing use of artificial intelligence and machine learning and new ways of doing research and analyzing data in this field create the potential to achieve the dream of reducing the prevalence of disorders and improving health in populations. Among the many advantages of digital technology is that preventive and clinical interventions can now be integrated into health care and community delivery systems: both are needed to reduce prevalence. We describe a new model—called Prevalence Reduction Through Outcome Optimization (PRTOO)—that uses prevalence, risk, reach, outcome, uptake, engagement and client/stakeholder input data, all continuously monitored, to inform prevention and intervention decisions. The application of aspects of this model is presented through a series of studies design, in part, to reduce prevalence of eating disorders in populations. The models include the application of PRTOO approaches to: (a) College and university populations of students with eating disorders, where a series of strategies were used to boost initial engagement rates from < 64% to >75% (uptake, engagement and outcome data will also be presented for this study); (b) National eating disorder screening efforts, where treatment options are being developed to increase uptake for the 100K+ individuals who screen positive for eating disorders each year, but who are not in treatment (baseline uptake rates will be presented.); and (c) A state-wide initiative where a combination of universal, targeted and indicated preventive and clinical interventions are offered to all students who screen positive for eating disorders in any of the state colleges or universities. While promising, PRTOO and other models of data-driven intervention improvement, will require further development and new methods of funding.

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USING DIGITAL TECHNOLOGY TO IMPROVE ESSENTIAL CARE DELIVERY AMONG THE RURAL POPULATION: THE SINEMA MODEL FOR EMPOWERING BOTH PROVIDERS AND PATIENTS

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The fast-growing mobile health technology provided a promising tool to address the barriers that hinder the prevention and management of chronic conditions. Most of existing mhealth interventions for chronic disease prevention and control in low- and middle-income countries focused on message-based health education program, while few of the existing solutions provide a system-approach solution to address the barriers at all system, providers' and patients' levels to promote disease management. The system-integrated technology-enabled model of care (SINEMA) is an innovative model designed to improve stroke secondary prevention in rural China with intervention components targeted on both providers and patients. The SINEMA model is supported by a digital health system that seamlessly integrated customized Android-based smartphone App for primary care providers and voice-messages for stroke patients. The SINEMA model was implemented in Nanhe County, rural China and was evaluated through a cluster-randomized controlled trial lasted for 12 months among fifty villages with 1299 stroke patients. The providers' follow-up survey demonstrated that the intervention resulted to an improvement in stroke care-related knowledge ($P=0.09$), more positive attitude on stroke care ($P=0.054$), and stronger confidence in patients' management ($P=0.009$) among village doctors in the intervention arm compared with control arm. Village doctors in the intervention arm also stated in the interviews that the SINEMA model improved their awareness on stroke patients' care, resulted in a better patient-doctor relationship, created new communication channels for provider-provider communication. The SINEMA intervention resulted in a modest but significant intervention effect on systolic blood pressure ($P=0.005$) among patients. The interview among patients revealed that voice-messages play as a reminder to supplement the frequent follow-up visits and improved patients' adherence to treatment, which was consistent with the quantitative findings on medicine use ($P<0.05$ for hypertensive medicine and aspirin) and medication adherence ($P<0.04$ for statin) between the two arms. As proven effective, the SINEMA model provides a solution for resource-limited settings with the potential of empowering existing primary healthcare providers and improving health outcomes among stroke patients.

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ENHANCING ACCOUNTABILITY AND REVIEW IN BEHAVIORAL RESEARCH

Valerie Durrant, Ph.D.¹, William T. Riley, Ph.D.¹, Christine M. Hunter, PhD², Kenneth E. Freedland, PhD³

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Behavioral research represents nearly \$5 billion of National Institutes of Health (NIH) grant funding each year. The goal of this funding is to produce a substantial and sustained impact on science and public health. This symposium will address areas for enhancement in innovation, accountability, and impact through recent findings on the innovation of behavioral intervention research and on the timely publication of grant-supported research as well as NIH efforts to better balance and align the content and scientific productivity of NIH study sections. Dr. Durrant will present on the Center for Scientific Review ENQUIRE initiative, a new continuous quality improvement effort to balance study sections by content areas and scientific productivity. Dr. Riley will present analyses of the proportion of R01 behavioral research grants that fail to publish in a timely manner and predictors of lag to publication. Dr. Hunter will present analyses of recently NIH funded behavioral clinical trials and the proportion testing novel intervention components or packages vs. adaptations of existing interventions. The discussant, Kenneth Freedland, will discuss potential implications of these initiatives and findings with a focus on opportunities to achieve greater accountability and productivity in future behavioral research.

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CONTINUOUS QUALITY IMPROVEMENT AT THE NIH CENTER FOR SCIENTIFIC REVIEW: ENQUIRE

Valerie Durrant, Ph.D.¹¹National Institutes of Health, Bethesda, MD

The NIH Center for Scientific Review (CSR) reviews 77% of the applications submitted to NIH, including most investigator-initiated research applications, in over 200 chartered or recurring scientific review groups (SRGs). The scientific merit of an application as assessed by study sections is a key consideration in the ultimate funding decision, and CSR and NIH have a keen interest in assessing SRGs and their outcomes. CSR has recently initiated the ENQUIRE (Evaluating Panel Quality in Review) process, a two-stage strategic process involving multiple stakeholders to examine the scientific scope, review outcomes, and procedural effectiveness of scientifically-connected groups of study sections. This presentation will provide an overview of the ENQUIRE process and the results of the process for a cluster of study sections related to health care delivery, patient management, and health behaviors conducted in 2019—highlighting the key considerations, rationale, and timeline for expected changes.

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ZERO PUBLICATIONS FROM R01 BEHAVIORAL RESEARCH

William T. Riley, Ph.D.¹, Sara Hargrave, Ph.D.²¹National Institutes of Health, Bethesda, MD; ²National Cancer Institute

Publishing study results is one of the most established methods for providing research transparency. Despite the importance of reporting or publishing results to research transparency and to a cumulative science that builds on prior research, studies of clinical trials have shown that between a third to a half fail to publish findings of the primary outcome in a timely manner (i.e., 2 to 3 years from the end of the project). Given the increased emphasis of scientific productivity as a criterion for evaluating and enhancing NIH study sections, the Office of Behavioral and Social Sciences Research (OBSSR) analyzed the publication records of R01 and U01 grants to determine the proportion behavioral and social science grants that do not publish in a timely manner. Using all R01 NIH funded grants in the last decade, the months from the end of the project period to the first publication associated with the grant were calculated. Approximately 10% of behavioral R01 grants had not published within 2 years from the end of the project and this percentage was slightly higher than the zero publication rate of grants not coded as behavioral. Survival analyses and Cox Proportional Hazard analyses were used to estimate the lag time to publication and predictors of the lag to publication and failure to publish in a timely manner.

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INTERVENTION INNOVATION IN BEHAVIORAL CLINICAL TRIALS FUNDED BY THE NIH

Christine M. Hunter, Ph.D.¹, William T. Riley, Ph.D.², Farheen Akbar, MPH³¹Office of Behavioral and Social Sciences Research, National Institutes of Health, Bethesda, MD; ²National Institutes of Health, Bethesda, MD; ³National Institutes of Health, Rockville, MD

The NIH has placed considerable emphasis on the translation of basic science findings to new intervention components or packages. This basic to applied translation is a scientific priority of the Office of Behavioral and Social Sciences Research (OBSSR) and is a core principle of the NIH Science of Behavior Change Common Fund initiative. A number of behavioral intervention development frameworks have also been proposed by the NIH. To assess if this focus on innovative intervention development has resulted in grants that evaluate new intervention components or packages, funded behavioral and social science grants from fiscal year 2018 that indicated they were clinical trials were evaluated by subject matter experts. If the grant focused on testing a social or behavioral intervention, the focus of the grants were manually coded as testing: 1) a new intervention component or package, 2) an adaptation of existing intervention components or packages to a new population, setting, mode of delivery, or disease area or 3) an existing intervention (e.g., pragmatic trial, comparative effectiveness, implementation science). Results of this analysis will be presented, and the implications for advancing behavioral intervention science will be discussed.

Symposium 60 2:00 PM-3:15 PM

HOW DOES YOGA INFLUENCE HEALTH AND WELLBEING? A FOCUS ON MECHANISMS OF EFFECT

Lisa A. Uebelacker, Ph.D.¹, Erik Groessl, Ph.D.², Crystal L. Park, Ph.D.³, Suzanne Danhauer, Ph.D.⁴¹Brown University and Butler Hospital, Providence, RI; ²UC San Diego, La Jolla, CA; ³University of Connecticut, Storrs Mansfield, CT; ⁴Wake Forest School of Medicine, Winston Salem, NC

Evidence regarding yoga's beneficial effects on health in myriad populations is rapidly increasing (Gerber, 2018). Yet because most yoga research has focused on evaluating its efficacy or effectiveness for producing positive health outcomes, our understanding of *how* yoga brings about these effects remains quite limited. Identifying the mechanisms through which yoga operates will allow interventionists to optimize the yoga delivered, potentiating its effects. In this symposium, three presenters will describe results of their studies that address yoga's mechanisms of effect. In the first presentation, Lisa Uebelacker will describe qualitative results of a study of people with chronic pain and in medication-assisted treatment for opioid use disorder who participated in the yoga arm of a 12-week pilot RCT. Participants identified multiple potential mediators, including cognitive processes such as an increased ability to focus their thoughts and reduced anxiety and physical tension. Erik Groessl will then describe results of an RCT of military veterans with chronic low back pain (CLBP). Results suggest that yoga reduces disability in veterans with CLBP by reducing fatigue and pain severity. In the last presentation, Crystal Park will describe psychosocial mechanisms of a mindful yoga intervention to reduce stress; particularly notable was mediation of reduced stress through improved spiritual wellbeing and interoceptive awareness, but not mindfulness. Our discussant, Suzanne Danhauer, will integrate these findings on yoga's mechanisms of action and highlight directions for future research.

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POSSIBLE MECHANISMS OF ACTION OF YOGA FOR PEOPLE WITH CHRONIC PAIN IN MEDIATION-ASSISTED TREATMENT FOR OPIOID USE DISORDER: A QUALITATIVE STUDY

Lisa A. Uebelacker, PhD¹, Donnell Van Noppen, BA², Genie Bailey, MD³, Geoffrey Tremont, PhD⁴, Ana M. Abrantes, PhD⁵, Michael Stein, MD⁶¹Brown University and Butler Hospital, Providence, RI; ²Butler Hospital, Providence, RI; ³Stanley Street Treatment & Resources, Fall River, MA; ⁴Brown University/ Rhode Island Hospital; ⁵Brown University / Butler Hospital, Providence, RI; ⁶Boston University School of Public Health, Boston, MA

Yoga participants may have insights into cognitive, affective, or other mechanisms that explain the impact of yoga on chronic pain. We conducted interviews with people with chronic pain who were in medication-assisted treatment for opioid use disorder, and who participated in a pilot randomized clinical trial of 12 weeks of hatha yoga for chronic pain vs. a health education control group. Eighteen of 20 participants assigned to the yoga arm completed the interview after their final class. Research staff asked participants about what they liked and did not like about the program; how the yoga program helped participants to improve their health or live with pain; what yoga practices they engaged in at home; and what components of yoga were most helpful and why. Research staff audiorecorded and transcribed interviews. We then created a codebook and coded participant quotes. We report key codes related to possible mechanisms of action here. Participants stated that both *asanas (postures)* and *breathing practices* were helpful. Asanas helped to decrease pain or tension in specific parts of the body. Different participants mentioned different asanas; no one asana stood out as most helpful. Participants expressed pride in the fact that they were engaging in a practice that *improved aspects of physical health*, including balance, strength, or posture. Overall, yoga practices, and especially breathing practices, helped participants to *feel less emotionally anxious* and to *decrease physical tension* within their bodies; this is one way in which yoga might lead to decreased pain or decreased pain-related impairment. Participants also talked about *changes in cognitions and cognitive processes*: i.e., an increased ability to focus their thoughts, shift the (negative) way they were thinking, pay attention to and accept their bodies, and feel a sense of accomplishment. These cognitive changes may also lead to decreased pain-related impairment. Notably, whereas many participants said that yoga practices had a positive impact on *pain severity*, a few stated that they were afraid to try or continue yoga because they thought it might increase physical pain. In sum, participants commented on numerous ways in which yoga may decrease pain or pain-related disability, including improved physical health, decreased anxiety, decreased physical tension, and change in cognitions or cognitive processes. Asanas also directly and immediately relieved specific pain for some participants.

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EXPLORING THE MECHANISMS OF YOGA FOR REDUCING DISABILITY IN VETERANS WITH CLBP

Erik Groessl, PhD¹, Adhana McCarthy, PA-C, MPA², Lin Liu, PhD¹¹UC San Diego, La Jolla, CA; ²UC San Diego

Military veterans have higher rates of chronic low back pain (cLBP) than non-veterans, and treatment options such as opioid medications have limited effectiveness and major side effects. Yoga has improved cLBP in non-veterans, but insufficient prior research exists with military veterans. In 2017, we completed an RCT of yoga with 150 military veterans with cLBP who were randomized to either yoga or a delayed-treatment group. Yoga sessions were provided 2x weekly for 12 weeks and home practice was encouraged. Assessments occurred at baseline, 12-weeks, and 6-months. Participants were a mean of 53.4 years old, 26% female, 51% non-White or Hispanic, 18% homeless in last 5 years, 20% taking opioids, and mean cLBP duration of 15 years. The yoga group reported significantly greater improvements in disability, pain severity and interference, fatigue, and quality of life. Here, we examine the mechanisms by which yoga reduced back pain-related disability (primary outcome).

Disability was measured with the Roland-Morris Disability Questionnaire. Pain was measured with the Brief Pain Inventory. Fatigue was measured with the Fatigue Severity Scale. Physiological measures included grip strength, balance, and flexibility. To examine the potential mechanisms by which yoga improved disability at 24 weeks, we used mediational analyses conducted using R software. First, we selected mediator variables from secondary outcomes that were correlated with disability scores and on which the yoga group had significantly greater change at 12- or 24-weeks. Pain severity and fatigue met the criteria. We then ran parallel and sequential mediational analyses. In the parallel analysis, the mediational effect of yoga through fatigue was significant ($p = 0.038$) and the mediational effect of pain severity trended towards significance ($p = 0.070$). The remaining direct effect of yoga on disability was not significant ($p = 0.116$). In the sequential analysis, the total mediated effect of yoga through pain severity and fatigue was significant ($p = 0.003$) while the direct effect remained unchanged.

In conclusion, data suggest that two mechanisms by which yoga reduces disability in veterans with cLBP are by yoga's effect on fatigue and pain severity while other direct effects of yoga were no longer significant. Physiological pathways were not significant here but may still be important. Pain is an expected mediator but our finding that fatigue was the most important factor measured is novel.

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PSYCHOSOCIAL MECHANISMS OF STRESS REDUCTION IN HIGHLY STRESSED ADULTS IN A 12-WEEK KRIPALU YOGA INTERVENTION

Crystal L. Park, PhD¹, Lucy Finkelstein-Fox, M.S.², Tosca Braun, PhD³, Sara Lazar, PhD⁴¹University of Connecticut, Storrs Mansfield, CT; ²University of Connecticut, Storrs, CT; ³Brown University; ⁴Massachusetts General Hospital

Although many studies have demonstrated that yoga interventions are effective at reducing stress, very little of this work has identified the mechanisms by which stress reduction is brought about. Understanding how yoga works is essential to optimizing yoga interventions. In the present study, we aimed to advance our understanding of yoga's mechanism of effects by testing five potential mediators that have been proposed to explain yoga's impact on stress. These mediators included increased self-control, mindfulness, interoceptive awareness, spiritual well-being, and ability to relate to others.

Methods: 41 participants (70% female; 63% White) who were enrolled in a yoga program to reduce stress at two study sites (one urban, one rural) completed self-reported validated surveys at baseline (T1), 8 weeks (T2), 12 weeks (T3; post-intervention), 16 weeks (T4; follow-up). Paired sample t-tests probed T1-T3 change, T1-T4 change, and T3-T4 maintenance. To assess hypothesized mechanisms, T3/T4 scores were regressed on T1 to generate standardized change residuals, then correlated.

Results: Reduction in stress as measured by the Perceived Stress Scale (PSS; Cohen, 1994) from T1 to T3 (although ns) was significantly associated with increased interoceptive awareness (MAIA; Mehling et al., 2012) and spiritual well-being (FACIT-Sp; Peterman et al., 2002) from T1 to T3 ($p < .05$). None of the potential mechanisms was a significant correlates of change in PSS from T1 to T4 (although this change was statistically significant, $p < .05$). Reduction in stress as measured by the DASS (Lovibond & Lovibond, 1984) from T1 to T3 was significant ($p < .05$) and similarly significantly associated with increase in interoceptive awareness and spiritual well-being from T1 to T3. Reduction in DASS stress from T1 to T4 (also statistically significant, $p < .05$) was significantly associated with increases in spiritual well-being from T1 to T3 and T1 to T4, increase in self-control (BSCS; Tangney, Baumeister, & Boone, 2004) from T1 to T4, and increases in ability to relate to others (Experiences in Close Relationships Scale-avoidance (Fraley et al., 2000) from T1 to T4. Change in mindfulness (FFMQ; Baer et al., 2006) was not significantly related to changes in either stress measure. All significant pre-post changes in psychosocial mechanisms were maintained from T3 to T4.

Conclusion: Results provide inferential support for psychosocial mechanisms through which yoga may reduce stress in highly stressed adults. These mechanisms provide important clues for finetuning interventions; for example, implementing yoga interventions a greater focus on spiritual well-being or interoceptive awareness may show stronger stress reduction effects. Future research should test these hypotheses more rigorously using active controls and larger sample sizes.

Symposium 61

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TRANSDISCIPLINARY INNOVATIONS TO ASSESS AND CHANGE LOCAL AND GLOBAL FOOD SYSTEMS TO SUPPORT HEALTHY EATING

Kayla de la Haye, PhD¹, Donna Spruijt-Metz, MFA, PhD¹, Abigail L. Horn, PhD¹, Bruce Lee, MD, MBA², Simone A. French, PhD³¹University of Southern California, Los Angeles, CA; ²CUNY, Baltimore, MD; ³School of Public Health University of Minnesota, Minneapolis, MN

The environments and systems in which people acquire and consume food profoundly influence diet and health because they shape food availability and accessibility, and they embody the social and choice architectures that influence eating decisions and habits. Many features of social, built, and macro environments have been associated with unhealthy eating, because they make it difficult to acquire healthy food and regularly cue unhealthy eating. Exposure to these environments has been associated with increased risk for diet-related diseases such as obesity, diabetes, heart disease, and cancer, and this risk is concentrated among communities that are low-income communities and of color, contributing to inequities in nutritional health.

However, our understanding of the ways in which people *interact* with these complex eating and food environments, the *dynamics* of eating behaviors in these systems as they unfold over time, and how these *multi-level processes* occur at a population scale, is nascent. There is now exciting potential to explore these research questions, which grapple with spatio-temporal contexts, system dynamics, and population-level phenomena, by combining behavioral medicine with mobile technology, big data, and novel systems science and data science methods. This knowledge has the potential to inform multiscale, whole-of-system interventions that effectively and sustainably promote healthy eating among priority populations.

In this symposium we present and discuss transdisciplinary team science that draws on innovative data, methods, and technologies to understand and intervene on eating behavior in the context of local and global system dynamics. Presenters with expertise in eating behavior, mobile health, data science, and systems science, present new research on eating behaviors and interventions in the context of dynamic family systems, built food environments, and macro-policy environments. A cross-cutting theme in each project is a focus on priority populations, and how innovations to monitor and modify eating in complex systems can inform efforts to reduce nutritional health disparities. Critically, we discuss the potential for this work to generate new insights and theoretical perspectives of eating behaviors that are embedded in time and context, and the role for this work to inform whole-system interventions and policy that leverage technology, big data, and transdisciplinary science to support healthy eating.

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MONITORING AND MODELING FAMILY EATING DYNAMICS IN REAL TIME USING MOBILE HEALTH TECHNOLOGIES

Donna Spruijt-Metz, MFA, PhD¹, Kayla de la Haye, PhD¹, Brooke Bell, BA², Abu Mondal, BS³, Meiji Ma, BS³, Ridwan Alam, n/a⁴, John Lach, PhD³, John Stankovic, PhD⁵

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Family eating dynamics have been shown to influence eating behaviors and even impact obesity, but until recently, these dynamics could only be assumed based on in-lab or in-home observation, or snapshots of these processes captured using questionnaires. We developed the Monitoring and Modeling Family Eating Dynamics (M2FED) sensor system to enable ubiquitous, real-time observations of several theoretically-important aspects of family eating dynamics in the home. M2FED captures individual eating behaviors, which family members eat together and when, moods and stress levels of individual family members during eating episodes, and eating in the absence of hunger. To do this the M2FED system includes multiple sensor components: smart watches trained to detect individual eating events; beacons placed in the home to spatially locate family members; and smartphones equipped with the M2FED app that triggers Ecological Momentary Assessments according to a combination of sensed eating events and a timed schedule to evaluate mood and stress. To integrate and analyze this information, the system also includes a CPU placed in participant's homes and a Cloud-based dashboard and storage capability.

M2FED has been deployed in the homes of 15 Latino families in Los Angeles (with 36 adults and 29 children participating), with each deployment lasting approximately two weeks. This talk will provide an overview of the data captured on these 15 families, and how they came together over food, when, with whom, and in what state (i.e. mood, stress), and how that was related to eating in the absence of hunger among family members. We will discuss the advantages and challenges of using new technologies to understand family eating dynamics in real time, including the interactions and trade-offs between the data that is needed to understand dynamic processes, participant burden, and the re-development of theory that can encompass the dynamic nature of eating behaviors within social systems.

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OBJECTIVE MEASUREMENTS OF FOOD ENVIRONMENT EXPOSURE AND ACCESS IN LOS ANGELES FROM BIG MOBILITY DATA

Abigail L. Horn, PhD¹, Kayla de la Haye, PhD¹, Esteban Moro, PhD², John Wilson, PhD³, Thomas Valente, PhD¹, Burcin Bozkaya, PhD², Moshen Bahrami, PhD², Sandy Pentland, PhD⁴

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Food environments—the spaces in which people acquire and consume food—profoundly impact diet and related diseases. However, measures of food environments typically focus on assumed exposures within predefined static locations, predominantly neighborhoods, and there is a lack of evidence about where people move around to access food. Big data on human mobility combined with spatiotemporal data science methods represent a new paradigm to provide objective, population-level measurements of the food outlets people are exposed to along their daily routes (activity-space food environments) and the food outlets that they actually visit (food foraging), and to study how these patterns relate to demographics, built environments, and ultimately nutritional health.

Working with an interdisciplinary team of scientists in public health nutrition, food system modeling, and data/computer science, we use a massive data set on individual mobility to characterize patterns of activity-space food environments and food foraging at an unprecedented scale and resolution in both time and space. We use a U.S.-wide dataset of mobility records collected on smartphones and shared by a mobile location service company through a Data for Good Initiative. This study focuses on a subset of these records for a representative sample of around 700,000 adult Los Angeles (L.A.) residents over a six-month period (2016-2017), and which includes geolocation every 5 or so minutes for each person. By combining this granular data with comprehensive “points of interest” databases we can detect billions of visits to geolocated food outlets (e.g., grocery stores, restaurants, corner stores). Although anonymous, the mobility data allows us to determine where each individual lives, works, and carries out routine activities. We use this information to characterize and model the activity-space food environments and food foraging patterns of these L.A. residents, and to explore differences in these patterns based on socio-demographics. We will discuss how these findings can advance our understanding of how diverse populations use food environments, and how mobile food environment exposures and accessibility impact nutritional health. More generally, we will discuss opportunities and limitations of mobility data science approaches as well as technical and ethical considerations in acquiring and using this type of data for health behavior research.

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FOOD SYSTEMS MODELS TO INFORM INTERVENTIONS AND POLICY

Bruce Lee, MD, MBA¹, Sheryl Siegmund, BS, mS², Kelly O'Shea, BSFS², Marie Ferguson, MSPH²¹CUNY, Baltimore, MD; ²CUNY

Dietary behaviors are complex systems and can be affected by complex systems. This includes biological, psychological, social, environmental, economic, and other systems. Unaided, considering all of these different systems and processes when designing policies and interventions can be challenging, if not infeasible. The risks of not considering and addressing these systems include developing band-aids rather than solutions, implementing unsustainable solutions, having unintended consequences, and wasting considerable time, effort, and resources through trial and error. Systems science approaches such as mapping and computational modeling can help better understand and address these systems. We have entered an era where the explosion in information, including Big Data and new ways to collect data, and computational advances have made such systems methods even more powerful. This presentation will review examples of how we have used such systems methods to determine appropriate diet-related policies and interventions, across several multi-scale contexts. One example is simulating and quantifying the resulting impact of changes in body mass index for a person at different ages. Another example is measuring the potential effects of a sugar-sweetened beverage warning label policy, in San Francisco, Baltimore, and Philadelphia. A third is a simulation study that uses agent-based models to demonstrate how current infant feeding recommendations could lead to unhealthy child weight trajectories, because they may not be taking into account variations in infant and family circumstances. Together, these examples highlight the immense potential for multidisciplinary teams using innovations in systems thinking and modeling to develop more effective and sustainable system-oriented interventions for nutrition.

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VACCINE HESITANCY AND SOCIAL MEDIA: LOOKING TOWARD A PUBLIC HEALTH AGENDA

Sherry Pagoto, PhD¹, Jasmin Tiro, PhD², Jeanine D. Guidry, PhD³, Beth L. Hoffman, MPH⁴, Bernard F. Fuemmeler, PhD, MPH³¹University of Connecticut, Storrs, CT; ²University of Texas Southwestern Medical Center, Dallas, TX; ³Virginia Commonwealth University, Richmond, VA; ⁴University of Pittsburgh, Pittsburgh, PA

In 2011, The Center for Disease Control listed vaccines as one of the 10 biggest public health achievements of the 20th century. Over the next few years, myriad infectious disease outbreaks occurred as a result of vaccination rates dipping below herd immunity thresholds. In 2019, the World Health Organization listed vaccine hesitancy among the top public health threats of the year. Despite widespread consensus within the medical community on the effectiveness and safety of vaccines, Web 2.0 technologies have allowed vaccine myths to spread as widely as the viruses they were designed to eradicate. This is not the first emergence of vaccine myths, such phenomena have been observed as far back as when the earliest vaccines were introduced in the 1700's. The goal of this symposium is to feature cutting edge research about vaccine myths and social media and to place it into historical context so as to generate a discussion about messaging strategies and policy approaches that leverage the new media environment to increase vaccine uptake. The first presenter will discuss her data on how vaccine hesitancy is actually a heterogeneous phenomenon. In an elegant latent class analysis, she portrays six shades of hesitancy among 1,193 parents in Texas and then explores the degree to which each is associated with beliefs in anti-vaccine content on social media. The second speaker will present a quantitative analysis of 500 HPV vaccine-related posts on the social media platform, Pinterest, prior to their recently imposed restriction on vaccine-related content. Unfortunately, only 3% of HPV vaccine-related posts were from official medical entities and none from government organizations. As such, nearly two-thirds of posts portrayed HPV vaccines as a threat to human health. This points to a dire need for public health organizations to take a more proactive role in leading the public narrative about vaccines. Finally, the third speaker will present her work exploring the historical context of the anti-vaccination movement. Her research reveals that as far back as the year 1721 anti-vaccine messages were being disseminated via the media. Given the reach of social media, such anti-vaccine messaging now has the ability to disseminate further and more quickly. The discussant and chair will synthesize this innovative blend of mixed methods research to put forth a research and public health agenda on vaccine hesitancy on social media. Given the modern nature of this problem and the need for modern solutions, this symposium is squarely in line with the Society of Behavioral Medicine Presidential Annual Meeting theme of discovering innovative solutions to tomorrow's health problems.

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ATTITUDES DRIVING VACCINE HESITANT BEHAVIOR AMONG PARENTS: A LATENT CLASS ANALYSIS

Jasmin Tiro, PhD¹, Serena Rodriguez, PhD, MPH², James Michael Blackwell, MPH³, Sharice Preston, PhD⁴, David Monticalvo, MPH², Erika Thompson, PhD, MPH, CPH⁵, Jenny Francis, MD, MPH⁶, Sandi Pruitt, PhD²

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Vaccine-hesitant parents are a heterogeneous group, and may be susceptible to misinformation on social media. We used scales measuring different aspects of vaccine hesitancy (general vaccine attitudes, conspiracy beliefs, and social media misinformation attitudes) to: (1) identify subtypes of vaccine hesitant attitudes, and (2) examine which subtypes are associated with hesitant behavior.

Methods: Via mail and email, we invited parents of adolescents living in North Texas to complete an online survey between April-Jun 2019. Items assessed vaccine hesitant behavior: (1) "ever delayed having," and (2) "ever decided not to have" your child get a vaccine (Yes/no/don't know). We measured beliefs with: (a) Opel's general vaccine attitudes scale; (b) Shapiro's vaccine conspiracy beliefs scale (Shapiro); and (c) credibility of HPV vaccine information on social media. Trust in provider was also measured. Latent class analysis and logistic regression were used for data analysis.

Results: 1,193 responded, most were mothers (65.6%), non-Hispanic white (60.0%), and college graduates (62.6%). About half (55.3%) reported their adolescent had not started the HPV vaccine series. Of the 660 parents of HPV-unvaccinated children, 25.8% reported delaying/refusing a vaccine at least once. In the total sample, we identified six classes of parents along the hesitancy continuum— (1) Very hesitant: endorses conspiracies; believes social media misinformation [7.9%]; (2) Very hesitant: endorses conspiracies especially about pharmaceutical companies, mixed beliefs about social media misinformation [13.7%]; (3) Moderately hesitant: endorses conspiracies [5.6%]; (4) Neutral about vaccines, conspiracies, and social media misinformation [10.5%]; (5) Not hesitant: does not endorse conspiracies, has mixed beliefs about social media misinformation [23.8%]; (6) Not hesitant: does not endorse conspiracies or believe social media misinformation [38.6%]. Despite these hesitant attitudes, a sizeable proportion of adolescents within each class were vaccinated (25.6% -73.4%). Trust in provider was lowest among parents in Class #2 ($P < 0.001$). Among the parents of unvaccinated children when compared to the neutral class #4, the very hesitant groups (Classes #1-2) were more likely to report hesitant behavior (aOR 3.30 and 4.98), while non-hesitant groups (Classes #5-6) were less likely to report hesitant behavior (aORs 0.72 and 0.29, respectively).

Conclusions: About 27% of parents were classified into a vaccine hesitant group that endorsed conspiracy beliefs; this population was mixed in whether they believed information on social media was credible. Social media campaigns targeted to parents in each of these six classes are needed. Messages addressing provider mistrust and pharmaceutical conspiracy beliefs should be developed to help parents manage vaccine misinformation found on social media.

2

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VACCINE (MIS)INFORMATION AMONG RECIPES: A COMPARATIVE ANALYSIS OF HPV VACCINE POSTS ON PINTEREST BEFORE AND AFTER SEARCH TERM BLOCKING AND REINSTATEMENT

Jeanine D. Guidry, PhD¹, Emily Vraga, PhD², Linnea Laestadius, PhD³, Hannah Ming, MPH⁴, Yan Qin, MS⁵, Xiaoli Nan, PhD⁵, Carrie Miller, PhD⁶, Aurora Occa, PhD⁷, Bernard F. Fuemmeler, PhD, MPH¹, Kellie Carlyle, Ph. D.¹

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Background: Despite widespread consensus within the medical community on the effectiveness and safety of vaccines, vaccine myths are prevalent on social networking sites. Recent studies have primarily focused on factual misinformation in the text of posts shared on social media. However, visual-based social media platforms, such as Pinterest, may produce unique insights into how misinformation about vaccines is spread. This study investigates (mis)information regarding human papillomavirus (HPV) vaccine on Pinterest, comparing HPV vaccine (mis)information on Pinterest prior to and after the platform took action to limit vaccine misinformation.

Method: A quantitative content analysis of 500 HPV-vaccine-related Pinterest posts was conducted using keywords "HPV vaccine" and "HPV vaccination" (both n=250) in late 2018. A follow-up analysis of a 250-post sample collected using keyword HPV vaccination in August of 2019 is ongoing, to assess differences between this newly collected sample and HPV vaccination posts from the first sample (n=250).

Results: Among the 500 visual posts of the first sample, most originated with individuals, with only 3% from official medical entities and none from government entities such as the CDC. Moreover, misinformation was prevalent among the posts, with 65.4% portraying the HPV vaccine as a threat and 13.9% discussing conspiracy theories related to the HPV vaccine. Additionally, 56.1% referred to adverse reactions to the vaccine, including death. Finally, 32.5% contained potentially fear-inducing material such as a large needle. Mann Whitney U tests showed that pins containing the threat of the HPV vaccine, photos/names of presumed HPV vaccine victims, HPV vaccine adverse reactions, and fear visuals produced significantly more engagement than pins that did not contain these elements.

Conclusion: In the first sample, HPV vaccine skepticism was prevalent and associated with higher engagement on Pinterest. This portrayal of the HPV vaccine is concerning and may have accelerated the spread of misinformation. This portrayal helps justify Pinterest's actions to limit public exposure to this content. In the second sample, early findings suggest that searches for "HPV vaccine" are still disabled and that hits from the search "HPV vaccination" are trending toward the health benefits of vaccination. Early results suggest that platform-based interventions may be able to help reduce the spread of health-related misinformation. Public health professionals should add the Pinterest platform to their social media toolkit to help combat the spread of HPV vaccine misinformation.

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VACCINE MISINFORMATION ON SOCIAL MEDIA: HISTORICAL CONTEXTS, LESSONS LEARNED, AND PATHS FORWARD

Beth L. Hoffman, MPH¹, Elizabeth Felter, DrPH, MPH, MCHES², Kar-Hai Chu, PhD¹, Chad Hermann, PhD³, Todd Wolynn, MD³, Jessica G. Burke, PhD¹, Jason Colditz, MEd¹, Riley B. Wolynn, n/a¹, Brian A. Primack, MD, PhD⁴

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Introduction: While the presence of vaccine misinformation on social media is well-documented, less is known about the historical context of the anti-vaccine movement and strategies to effectively counter the spread of this misinformation. The purpose of this presentation is to (1) integrate findings from a previous study on vaccine misinformation on Facebook into a broader historical framework, and (2) discuss three approaches to counter the impact and spread of this misinformation.

Methods: A literature review was conducted for the historical overview, and results were synthesized with findings from a 2019 research study of 197 individuals who posted anti-vaccination comments on a Pittsburgh pediatric practice's Facebook page. These findings are influencing an ongoing collaboration between public health researchers and pediatricians to develop and pilot test interventions aimed at reducing the spread and influence of vaccine misinformation.

Results: Throughout history, the anti-vaccination movement has consistently used fear-evoking images, distortion of data, and personal narratives to spread misinformation; these same techniques are used today in Facebook posts containing vaccine misinformation. Facebook posts that were shared on multiple profiles in our sample (i.e., went “viral”) bore a striking resemblance to 1721 anti-vaccination headlines in the *New England Courant* and 19th century anti-vaccine newspaper cartoons. In September 2019, a rapid-response, pro-science social media network—the “Shots Heard” initiative—was launched to aid and support practices that sustain an anti-vaccine attack. It currently has over 230 members has already been activated to assist health professionals on both Facebook and Twitter.

Conclusions: Social media outlets facilitate anti-vaccination connection and organization, thus assisting in the amplification and diffusion of centuries-old arguments and techniques. These findings suggest the importance of understanding the history of the anti-vaccination movement when developing tools to counter vaccine misinformation on social media. Current efforts to curb the spread this misinformation include media literacy education and entertainment education interventions, as well as online practitioner collaborations.

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NEGATIVE AFFECT, QUALITY OF LIFE, AND IMMUNE FUNCTION IN CAREGIVERS OF CHILDREN WITH SPECIAL HEALTHCARE NEEDS

Mandy Bamber, PhD¹, Ross May, PhD², Isela Valera, PhD²

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Objective: The primary aim of this study was to explore relationships between trait mindfulness, negative affect, caregiver burden, burnout, quality of life (QOL), and resiliency in informal caregivers of children with special healthcare needs (CSHCN). We also examined the effects of caregiver burden on immune, cytokine, and aortic function, and compared results to informal caregivers of typically developing children.

Background: Children with special health care needs have chronic physical, mental, behavioral, or developmental condition and require more health-related services. This population account for 18% of children and are typically cared for by family (informal caregivers). Informal caregivers neglect their own health and wellbeing, resulting in severe stress, illness, depression, and anxiety. Caregiver burnout leads to increased work absenteeism, social isolation, and increased hospital admissions for their loved one. The number of informal caregivers is growing exponentially, which substantially impacts our healthcare system. Informal caregivers can improve the wellbeing, QOL, and health outcomes of their loved ones and reduce healthcare costs through decreased hospital readmissions and long-term care in the home. However, the considerable risk to informal caregivers' psychological and physical health can be detrimental.

Methods: Fifty-six informal caregivers of typically developing and CSHCN were recruited to participate. Data was collected in a single time point. Participants completed measures for: negative affect, quality of life, caregiver burden, burnout, trait mindfulness, and resiliency. Aortic hemodynamics was collected using the Arteriograph24. A venous blood sample was collected to examine immune (IgG1, IgG2, IgG3, IgG4, IgA, IgM) and cytokine function (IL-4, IL-2, CXCL10 IL-1β, TNF-α, MCP-1, IL-17A, IL-6, IL-10, IFN-γ, IL-12p70, CXCL8, TGF-β1).

Results: There were no significant correlations or differences between groups on trait mindfulness and aortic hemodynamics. Significant correlations were present between trait mindfulness subscales: nonjudging with negative affect, QOL, resiliency, self-esteem, burnout, and burden; nonreactivity with self-esteem, negative affect, burnout, and burden; awareness with QOL, burden, & burnout; observing with QOL. Informal caregivers of CSHCN had greater negative affect, caregiver burden, physical burnout, increased IgG1, and decreased cytokine function (IL-1, TNF-α, IFN-γ, TGF-β, IL-2) compared to caregivers of typically developing children.

Conclusions: Caregiving significantly impacts physical and psychological health of caregivers. We plan to examine intracellular immune and inflammatory function to fully describe the effects of caregiving on these systems. Future studies should compare effects of self-help interventions on psychological and physical caregiver health.

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NEGATIVE AFFECT, QUALITY OF LIFE, IMMUNE FUNCTION, AND AORTIC HEMODYNAMICS IN CAREGIVERS OF CHILDREN WITH SPECIAL HEALTHCARE NEEDS

Mandy Bamber, PhD¹¹Florida State University College of Nursing, Tallahassee, FL

Objective: The primary aim of this study was to explore relationships between trait mindfulness, negative affect, caregiver burden, burnout, quality of life (QOL), and resiliency in informal caregivers of children with special healthcare needs (CSHCN). We also examined the effects of caregiver burden on immune, cytokine, and aortic function, and compared results to informal caregivers of typically developing children.

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Results: There were no significant correlations or differences between groups on trait mindfulness and aortic hemodynamics. Significant correlations were present between trait mindfulness subscales: nonjudging with negative affect, QOL, resiliency, self-esteem, burnout, and burden; nonreactivity with self-esteem, negative affect, burnout, and burden; awareness with QOL, burden, & burnout; observing with QOL. Informal caregivers of CSHCN had greater negative affect, caregiver burden, physical burnout, increased IgG1, and decreased cytokine function (IL-1, TNF- α , IFN- γ , TGF- β , IL-2) compared to caregivers of typically developing children.

Conclusions: Caregiving significantly impacts physical and psychological health of caregivers. We plan to examine intracellular immune and inflammatory function to fully describe the effects of caregiving on these systems. Future studies should compare effects of self-help interventions on psychological and physical caregiver health.

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NIH-DOD-VA PAIN MANAGEMENT COLLABORATORY: PRAGMATIC CLINICAL TRIALS OF NONPHARMACOLOGICAL APPROACHES TO PAIN MANAGEMENT

Robert Kerns, PhD¹, Julie M. Fritz, PT, PhD², Susan N. Hastings, M.D., M.H.S.³, Steven George, PT, PhD, FAPTA⁴, Wendy Weber, ND, PhD, MPH⁵, Daniel Rhon, DSc⁶

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Pain management is a high priority for the Departments of Health and Human Services, Defense (DoD) and Veterans Affairs (VA). Prevalence of pain and chronic pain are higher among veterans and military service members than civilians. High rates of medical and mental health comorbidities increase the complexity of the pain experience in these populations and add to the challenges of effective pain management. To address these challenges, DoD and VA have adopted the stepped care model of pain management and other guidelines and care pathways that emphasize timely and equitable access to integrated, patient-centered, evidence-based, multimodal and interdisciplinary pain care emphasizing nonpharmacological approaches and promotion of adaptive pain self-management. In 2017, these agencies partnered with the National Institutes of Health (NIH), especially the National Center for Complementary and Integrative Health (NCCIH), to fund the NIH-DoD-VA Pain Management Collaboratory (PMC) that supports design optimization and conduct of 11 pragmatic clinical trials of nonpharmacological approaches for managing pain and comorbidities in Veteran and Military Health Systems. This approximately \$81 million initiative addresses key scientific knowledge and practice gaps and supports DoD and VA pain strategic initiatives. Dr. Robert Kerns, one of 3 program directors for the PMC Coordinating Center, will chair the symposium and present the aims, structure and functioning of the Collaboratory and introduce the concepts of pragmatic clinical trials and their relevance for addressing the gap between evidence for nonpharmacological approaches and limited integration of these approaches into routine clinical care. Progress on multiple issues related to study design and biostatistics, phenotyping and outcomes, optimizing use of electronic health records, data sharing, ethical and regulatory challenges, stakeholder engagement and implementation science will be presented. Principal investigators from two trials being implemented in either VA (Drs. Susan Hastings and Steven George) and DoD (Drs. Julie Fritz and Daniel Rhon) will follow this overview and (1) describe their trials highlighting their key scientific knowledge gaps and aims to address them and innovative pragmatic design and methodological features and (2) present preliminary stakeholder data that informed modification of their trials to optimize successful trial implementation and impact. Dr. Wendy Weber, Project Scientist for the PMC and Clinical Research Branch Chief, Division of Extramural Research at NCCIH, will serve as discussant. She will provide additional background and context for the PMC initiative, highlighting important differences between explanatory and pragmatic clinical trials and the potential significance and innovation of the initiative.

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SMART STEPPED CARE MANAGEMENT FOR LOW BACK PAIN IN MILITARY HEALTH SYSTEM

Julie M. Fritz, PT, PhD¹, Dan Rhon, PT, DSc²¹University of Utah, Salt Lake City, UT; ²Physical Performance Service Line, Office of the Surgeon General

Background: Chronic pain is a ubiquitous concern in civilian and military populations. Incident rates for chronic pain among active duty military members increased more than 3-fold from 2007 – 2014. More than half of veterans who served in recent deployments report chronic pain. The most common chronic pain diagnosis in the Military Health System (MHS) is low back pain (LBP). For active duty military, LBP has been the most common reason for a medical encounter every year since 2011, accounting for over 1 million encounters in 2015 at a cost of nearly \$1 billion in medical expenditures. LBP is also the leading cause of medical discharge across military services and is one of the leading causes of seeking healthcare or being evacuated from a combat theater. These factors along with the contribution of chronic LBP to the opioid crisis make the condition a priority for improvement in the MHS. The 2010 U.S. Army Pain Management Task Force report recommended a stepped care approach that begins with lower cost, readily available interventions followed by more intensive treatments for individuals who do not respond. A key challenge in implementing stepped care for LBP comes from the large number of interventions encompassed by each Step and a lack of information on comparative effectiveness, treatment tailoring and sequencing within Steps. Lack of guidance on what treatments to choose for a particular patient is a primary motivation for this project.

Aims and Objective: We will conduct a sequential multiple assignment randomized trial (SMART) trial comparing the effectiveness and cost-effectiveness of initial and follow-up treatments based on a stepped care model for patients with chronic LBP in the MHS using patient-centered outcomes and healthcare utilization including opioid use. Sub-aims will compare main effects of initial and follow-up treatment options and the sequencing effects of different treatment combinations.

Design & Methods: We will recruit active duty military members, family members, or Tricare beneficiaries receiving care for chronic LBP in an MHS facility. Participants will first receive 6 weeks of Phase I care with either physical therapy (PT) or Move to Health (M2H) interventions. The M2H intervention is a holistic well-being approach using motivational interviewing and goal setting to address lifestyle factors impacting chronic pain. After Phase I we will assess response to initial treatment strategy. Phase I responders will be receive up to 2 additional sessions of treatment to facilitate a transition to self-management. Phase I non-responders will be randomly assigned to a more intensive Phase II treatment of either mindfulness or a combined PT+M2H intervention. Phase II will last for 8 weeks with follow-up assessments at 18 weeks (conclusion of Phase II), 6 months and 12 months after enrollment. Outcomes include patient-reported measures and healthcare utilization and costs.

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IMPROVING VETERAN ACCESS TO INTEGRATED MANAGEMENT OF BACK PAIN (AIM-BACK): A PRAGMATIC, CLUSTER RANDOMIZED TRIAL

Susan N. Hastings, M.D., M.H.S.¹¹Durham VA Center of Innovation, Durham, NC

Background: Low back pain (LBP) is among the most prevalent and disabling medical conditions experienced by Veterans. Improving patient care for LBP is a high priority for many federal agencies and recent clinical practice guidelines emphasize the importance of non-pharmacological management of LBP. However, optimal care pathways to enhance access to non-pharmacological treatments have not been well-established.

Aims: The primary study aim is to examine the effectiveness of two different guideline-concordant, clinical care pathways that emphasize the delivery of non-pharmacological treatment options for LBP. A secondary aim is to determine participant characteristics associated with greater improvements in pain interference and function, and better adherence to each care pathway.

Methods: A key activity during the study planning phase was stakeholder engagement. We conducted semi-structured individual telephone interviews (n=13) with health care professionals involved in LBP care, and a focus group (n=6) among patient-representatives and caregivers. Stakeholders were positive about the focus on multimodal non-pharmacological care and enthusiastic about a telehealth delivery approach. Key insights included framing of the mental health aspect in a non-stigmatizing manner and emphasis on communication skills among individuals delivering the care pathways. Based on stakeholder input care pathways were finalized into 1) Integrated Care Pathway characterized by early physical therapy/pain modulation, home based activity, risk stratification, and behavioral treatment (if indicated) and 2) Coordinated Care Pathway characterized by pain navigator coordinated care that includes shared decision-making and facilitated guideline-adherent referrals. During the next phase, we will conduct a 4-year embedded pragmatic trial in the VA health care system to compare the effectiveness of the two care pathways for LBP. Sixteen VA clinics will be randomized 1:1 to the Integrated Care or Coordinated Care Pathway. Veterans (n = 1680) will be followed for primary outcomes (PROMIS Short Form scores for pain interference and function) captured from the electronic health record and a subset (n = 840) will complete telephone interviews for additional patient-reported outcomes to augment electronic health record data.

Conclusions: A phased pragmatic clinical trial design allowed for early stakeholder engagement that enhanced development of multimodal non-pharmacologic treatment pathways. Future trials should account for the need to engage stakeholders early in the planning stages of studies that will be embedded within health systems. Trial results will provide critically needed information on best methods for improving LBP care for Veteran populations as well as inform the potential for matching Veteran subgroup characteristics to a specific care strategy for better outcomes.

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THE PROMISE OF PRAGMATIC TRIALS TO IMPROVE WOMEN'S HEALTH: CLOSING RESEARCH-TO-PRACTICE GAPS IN OBESITY & DIABETES PREVENTION

Susan D. Brown, PhD¹, Obidiugwu K. Duru, MD, MS², Monique Hedderson, MPH, PhD¹, Leanne Redman, PhD, FTOS³, Cheryl L. Albright, PhD, MPH⁴, Assiamira Ferrara, MD, PhD⁵

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Certain risk factors for obesity and diabetes are unique to women, such as excess weight gain during pregnancy and gestational diabetes mellitus (GDM). Women also have unique interactions with healthcare systems and community programs across the life span. These touchpoints present opportunities to embed pragmatic trials of interventions with potential for broad reach and population health impact. Such trials may help close gaps between research and practice by testing scalable interventions designed with implementation in mind.

The goal of this symposium is to advance pragmatic research in women's health by discussing the design and methods of behavioral intervention trials in health care and community settings that target women's unique risk factors for obesity and diabetes. The symposium will begin by highlighting features of pragmatic trials and investigator resources that reflect the growing interest in pragmatic designs. Presenter 1 will discuss successes and challenges in the conceptualization and conduct of pragmatic research among women with GDM, including collaborations with health system leaders. Presenter 2 will describe how a cluster-randomized trial on shared decision-making in primary care clinics informed research to promote diabetes prevention health services among women with GDM. Presenter 3 will describe the rationale and methods for a pragmatic trial testing a mobile health (mHealth) weight management intervention among pregnant women with overweight or obesity in an integrated health system. Presenter 4 will describe engagement with community partners and stakeholders to develop a pragmatic, scalable, and patient-centered weight management intervention for pregnant women in the Louisiana Women's, Infants and Children (WIC) program, which is being evaluated in a state-wide randomized controlled trial. Finally, the Discussant will summarize lessons learned across trials and identify future opportunities for pragmatic prevention research in women's health.

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SHARED DECISION MAKING IN DIABETES PREVENTION: HELPING WOMEN AT HIGH RISK CONSIDER BOTH LIFESTYLE CHANGE AND METFORMIN

Obidiugwu K. Duru, MD, MS¹, Tannaz Moin, MD, MBA, MSHS¹, Norman Turk, MS², Amanda Vu, PharmD², Dominick Frosch, PhD³, Kia Skrine Jeffers, PhD, RN⁴, Yelba Castellon-Lopez, MD⁵, Chi-Hong Tseng, PhD², Keith Norris, MD, PhD², Carol Mangione, MD, MSPH²

¹UCLA, Los Angeles, CA; ²UCLA Division of General Internal Medicine/Health Services Research; ³Palo Alto Medical Foundation Research Institute; ⁴UCLA School of Nursing; ⁵UCLA Department of Family medicine

More than 84 million Americans are at risk for diabetes. Few are receiving treatment to prevent it, and many are not aware they are at risk. The Diabetes Prevention Program (DPP) showed that both metformin and lifestyle change can help prevent diabetes, so it is important that patients and healthcare providers work together in a shared decision making (SDM) approach to decide which approach best matches the patient's diabetes risk as well as patient's needs and preferences. This is particularly true for women with a history of gestational diabetes mellitus (GDM), who are at particular risk of developing diabetes and for whom metformin and lifestyle change have similar effectiveness. Our research team recently conducted a cluster-randomized trial of SDM led by clinical pharmacists in 20 primary care practices in a large healthcare system. The study enrolled overweight/obese adults with prediabetes (BMI >24 kg/m² and HbA1c 5.7-6.4%) were enrolled from 10 intervention clinics. Propensity score matching was used to identify control patients from 10 usual care clinics. In the intervention, pharmacists engaged patients in a face-to-face SDM visit using a decision aid (DA) to describe prediabetes and four possible options for diabetes prevention; in-person DPP, in-person DPP +/- metformin, metformin only, or usual care. We found that among female participants who initiated diabetes prevention, 67% attended the DPP lifestyle change program while 44% started metformin, underscoring the importance of presenting both options to this population. We also found that in an intention-to-treat design, the mean weight loss at 12 month follow-up for women who participated in SDM, regardless of what strategy they chose, was -4.9 lbs. Based on these results, our team conducted a new follow-up pilot study specifically among a women with a history of GDM, who were at least 12 months post-partum. In this study, pharmacists shared the DPP and DPP Outcome Study data specific to the GDM subpopulation during the SDM sessions. The pilot study also included online DPP in addition to in-person DPP as lifestyle change options. The 29 study participants self-reported their race and ethnicity in separate categories: 13 were white, 11 Asian, 10 Latino and 2 African American. At the time of the SDM consult, 24 (83%) chose DPP, and 9 (31%) chose metformin, while only 2 (7%) declined starting either option. The great majority of the women who chose DPP selected the online option, as many said this best fit their schedule. We have also surveyed an additional 111 women with a GDM history, to better understand their perspectives on diabetes prevention and shared decision making. Based on these findings, our team is planning a larger SDM intervention for women with a GDM history, to help them understand the relative benefits of lifestyle change and metformin and make the personal decision they feel is best.

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DEVELOPMENT AND TESTING OF AN ADAPTIVE INTERVENTION AMONG PREGNANT WOMEN WITH OVERWEIGHT OR OBESITY: A PRAGMATIC RANDOMIZED CONTROLLED TRIAL IN AN INTEGRATED HEALTH SYSTEM

Monique Hedderson, MPH, PhD¹, Assiamira Ferrara, MD, PhD², Susan D. Brown, PhD¹, Cheryl L. Albright, PhD, MPH³

¹Kaiser Permanente Northern California, Oakland, CA; ²Division of Research, Oakland, CA; ³University of Hawaii at Manoa, Honolulu, HI

Pregnant women with overweight or obesity are at high risk of perinatal complications. More than half of women with overweight or obesity exceed the Institute of Medicine (IOM) GWG guidelines, which further exacerbates their elevated risk of perinatal complications. Thus, there is an urgent need to help pregnant women with overweight and obesity achieve appropriate GWG. Traditional high-intensity interventions to improve GWG among overweight and obese women have achieved success but are too time intensive for some women. Emerging evidence and our pilot study suggest that mobile health (mHealth) interventions for weight management can be effective in pregnancy, but a large-scale randomized trial in the real-world clinical setting is needed. We will discuss the design and implementation of an ongoing pragmatic randomized controlled trial of pregnant women with overweight or obese women randomized to usual care or usual care plus an mHealth intervention. Here we describe the rationale and design of the intervention, developed in partnership with clinical leaders in a large integrated health system, to promote appropriate gestational weight gain. To increase scalability, an adaptive intervention that begins with an effective, yet low resource-intensive treatment and then provides incremental support and resources only to patients who need them will be discussed. Technology-based tools—including a mobile app, wireless “smart” scale, wearable activity tracker, and diet tracking app—will enable convenient self-monitoring, feedback, and goal setting. mHealth interventions offer a promising scalable solution to overcome patients’ and clinicians’ barriers to GWG management. If this mHealth intervention is proven effective, it could become a complementary part of clinical care, leading to better outcomes for mothers and their infants.

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DEVELOPMENT OF A PRAGMATIC, SCALABLE, AND PATIENT-CENTERED WEIGHT MANAGEMENT INTERVENTION FOR PREGNANT WOMEN IN THE LOUISIANA WOMEN’S, INFANTS AND CHILDREN (WIC) PROGRAM

Leanne Redman, PhD, FTOS¹, L. Anne Gilmore, PhD, RD, LDN², Abby Altazan, MS², Emily Flanagan, PhD²

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Low income and minority women are the most vulnerable to maternal obesity, to excessive weight gain during pregnancy and poor birth outcomes and their children have the highest prevalence of childhood obesity. Evidence suggests that risks of maternal and childhood obesity and chronic disease can be attenuated by interventions in pregnancy that promote healthy gestational weight gain. Effective and scalable healthcare services developed specifically for under-served women during pregnancy is urgently needed to impact the health of future generations. The USDA Special Supplemental Nutritional Program for Women, Infants and Children (WIC), a vital service provider to approximately 15% of U.S. pregnancies per year, has an unprecedented opportunity to positively impact the inter-generational influences of poor nutrition during pregnancy and early childhood. In our previously funded research we developed and tested the efficacy of SmartMoms®, a novel e-Health intensive lifestyle intervention that relies on behavior change theory to promote healthy rates of gestational weight gain through a smartphone application. In a randomized controlled pilot trial, SmartMoms® significantly reduced the proportion of overweight/obese pregnant women with excess gestational weight gain by more than 30% according to the 2009 Institute of Medicine recommendations. Compared to an identical intervention delivered in-person, SmartMoms® fostered greater adherence and the cost to the participant was 3.5 times cheaper. SmartMoms® is scalable. Since participants are “mobile”, SmartMoms® has the potential to overcome many of the barriers to intensive lifestyle interventions reported in under-served women such as lack of transportation and time. With input from community and peer groups, SmartMoms® was adapted for under-served women by considering health literacy, cultural beliefs, behavior patterns and value systems in the design. Using formative research and systematic consultations with a Community Advisory Board and a WIC Peer Advisory Group we adapted SmartMoms® for low-income women. The stakeholder groups informed production of the SmartMoms® curriculum; a gamification component to incentivize participation; and helped to ensure cultural sensitivities and health literacy was incorporated in the intervention. An adapted SmartMoms® offers an innovative, cost-effective and scalable solution for gestational weight gain management in women served by WIC which is now being tested in a pragmatic, community-based randomized, clinical trial.

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DIABETES PREVENTION AMONG WOMEN WITH GDM: DEVELOPING AND TESTING INTERVENTIONS AT THE HEALTH SYSTEM LEVEL

Assiamira Ferrara, MD, PhD¹

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Women with obesity face increased risk for gestational diabetes mellitus (GDM), or diabetes first diagnosed during pregnancy. In turn, GDM markedly increases women’s risk for developing type 2 diabetes later in life. This presentation will discuss strategies for designing and implementing health system-based interventions aimed at breaking the cycle of obesity, gestational diabetes, and type 2 diabetes. Behavioral interventions that leverage electronic health records and care delivery via telemedicine will be discussed. Examples include health communication interventions to promote appropriate weight gain during pregnancy and telephone-based interventions adapted from the Diabetes Prevention Program curriculum. In particular, this presentation will focus on partnerships with clinical and operational leaders that are essential to the successful development and conduct of pragmatic trials in health system settings. This presentation will also highlight needs for future research, including the need for sustainable models of care that maximize patient and health provider satisfaction while minimizing cost.

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STRESS FROM WITHIN: SEXUAL MINORITY MEN'S COMMUNITY AND ROMANTIC ATTACHMENTS AND HEALTH-RELATED RISKS

Ilan Meyer, Ph.D.¹, Brock Grecco, Master of Social Science², Bianca D. Wilson, Ph.D.³, Phillip Hammack, Ph.D.⁴, John Pachankis, Ph.D.⁵, Kirsty A. Clark, Ph.D., MPH⁶, Charles Burton, Ph.D.⁷, Tyrel J. Starks, Ph.D.⁸, Gabriel Robles, Ph.D.⁹

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Validated across hundreds of studies, minority stress theory has emerged as the predominant explanation for the substantial disparities in sexual minority mental (e.g., depression) and behavioral (e.g., HIV-related risk behavior) health. At the same time, careful examination of many of these studies suggests that minority stress does completely account for this disparity, leaving open the possibility that other less examined phenomena are at play. This panel presents emerging evidence that sexual minority men's experiences of mental and behavioral health challenges might at least partially be explained by stressors existing within sexual minority men's own communities and relationships.

First, we will review qualitative data showing that young sexual minority men today largely experience their community in terms of sex apps. Although the gay community has historically been a source of support and protection for its most vulnerable members, today's young sexual minority men's use of these apps imbues the gay community with intersectional sources of marginalization leaving many young sexual minority men vulnerable to rejection concerns and related health risks within their own community.

Second, a series of eight multimethod studies will show that sexual minority men are particularly stressed by their perceptions that the gay community is focused on sex, status, competition, and exclusion of diversity. We show that gay community stress, in fact, better predicts sexual minority men's mental health than minority stress. Three experiments locate the origin of this stress in the unique, status-based competitive pressures faced by sexual minority men, who by virtue of the fact that their social and sexual relationships often occur with other men might be particularly likely to compete with each other for social and sexual gain.

Third, we will show that sexual minority men's experiences of gay community stress also predict their HIV-risk behavior. We will present experimental evidence showing that sexual minority men's rejection by other sexual minority men leave them prone to risk-taking behavior.

Finally, we will examine stressors emerging from young sexual minority men's romantic relationships. Stigma-related histories leave this population vulnerable to attachment-related difficulties, which are potentially exacerbated within couples' relationships. We will show that attachment anxiety and avoidance within young sexual minority male couples can leave these couples vulnerable to substance use, with implications for couples' intervention.

Ilan Meyer, developer of minority stress theory, will discuss ways that the emerging evidence presented here for *within*-community stress complements and extends minority stress theory to offer a more comprehensive portrait of the social determinants of sexual minority men's mental and behavioral health than previously recognized.

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“WHITE, TALL, TOP, MASCULINE, MUSCULAR”: INTRA-COMMUNITY MARGINALIZATION AMONG YOUNG GAY AND BISEXUAL MEN

Brock Grecco, Master of Social Science¹, Phillip Hammack, Ph.D.², Ilan Meyer, Ph.D.³, Bianca D. Wilson, Ph.D.⁴

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The LGBT community has been a source of support and resilience to LGBT people, but LGBT people are also susceptible to intra-community rejection and marginalization. LGBT people may find themselves stigmatized by norms governing sexuality, gender, gender expression, race/ethnicity, and social class. We present results of research that aimed to understand how young gay and bisexual men experience intra-community marginalization. We adopted an intersectional approach that attends to the effects of multiple stigmatization. Based on existing literature we hypothesized that the following themes may impact young gay/bisexual men: body type, race/ethnicity, substance use, gender expression, sexuality, HIV/AIDS status, and socioeconomic status.

Method: Data was collected as part of the *Generations* qualitative study in 5 regions in the United States using advertising and in-person recruitment in LGBT venues. Comprehensive interviews were conducted in person by trained interviewers with 191 men and women of all ages. Interviews were transcribed verbatim and analyzed using Dedoose software. In this paper we report on all young (18 – 25 years-old) gay/bisexual men (including those identified in similar sexual minority terms, like pansexual, N = 32). Interviews were coded for use of intra-community stigmas reported in the literature with the objective of describing themes in the narratives that would support or disconfirm the hypothesized themes.

Results: Social apps played a central role in the young men's understanding and experience of community. Many respondents perceived intra-community marginalization related to body, race, gender expression and sexuality. Stigma related to HIV/AIDS status, substance use and social class were minimally present. When stigmas were present, they tended to be experienced interactionally, particularly regarding racialized stereotypes expectations (e.g., Asian men are twinks, effeminate). If an individual was not perceived to meet stereotypical idealized traits for their race, then they felt rejection from and marginalization in the community.

Conclusion: While research has shown that connection to the LGBT community can have a positive health impact, even ameliorating the negative impact of minority stress, the young men in our study had a sense of community that was tied in with use of social (in particular, sex) apps that may be damaging to health and counteract other positive impacts of connections with the LGBT community. As the primary means of connection to the LGBT community for many in this cohort, sex apps have the potential to negatively impact their identities, health, and well-being with perceptions of rejection leading to feelings of isolation, low self-esteem, and rejection-related stress.

2

2:00 PM-3:15 PM

SEX, STATUS, COMPETITION, AND EXCLUSION: INTRA-MINORITY STRESS FROM WITHIN THE GAY COMMUNITY AND SEXUAL MINORITY MEN'S MENTAL AND BEHAVIORAL HEALTH

John Pachankis, PhD¹, Charles Burton, PhD², Kirsty A. Clark, PhD, MPH³

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Sexual minority men might face unique, status-based competitive pressures given that their social and sexual relationships often occur with other men, who are known to compete for social and sexual gain. In a multistage study, we tested a novel theory of intra-minority gay community stress suggesting that status-focused elements of the gay community contribute to sexual minority men's mental health problems and associated behavioral risks. We first created a measure of gay community stress with items derived from qualitative interviewing ($n = 49$); calculated its psychometric properties, including one-year temporal stability ($n = 937$); and confirmed its structural stability in samples of US ($n = 96$) and Swedish ($n = 1,413$) sexual minority men. Being stressed by perceiving the gay community's focus on sex, focus on status, focus on competition, and exclusion of diversity predicted sexual minority men's mental health over-and-above a comprehensive battery of traditional minority stressors ($\beta = .17$, $p < .01$) and mediated the influence of gay community status on mental health. To examine the impact of status concerns (i.e., about masculinity, attractiveness, and wealth) on sexual minority men's feelings of exclusion in interactions with other sexual minority men, a series of experiments manipulated 1) the sexual orientation of rejecters (i.e., heterosexual vs. gay; $n = 103$), 2) the social status of sexual minority rejecters (i.e., high vs. low; $n = 84$), and 3) whether the type of rejection from sexual minority rejecters (i.e., status-based vs. non-status-based; $n = 252$). Overall, these experiments provide partial support for the possibility that sexual minority men's status concerns underlie their experience of gay community stress. Together, these studies advance psychological and sociological accounts of sexual minority men's mental and behavioral health beyond minority stress theory, with implications for interventions.

3

2:00 PM-3:15 PM

RISK FROM WITHIN: GAY COMMUNITY STRESS AND SEXUAL RISK-TAKING AMONG SEXUAL MINORITY MEN

Kirsty A. Clark, PhD, MPH¹, Charles Burton, PhD², John Pachankis, PhD³

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Background: Sexual minority men remain highly impacted by the human immunodeficiency virus (HIV) with social stress being a clear predictor of their risk for infection. The past several decades of research regarding sexual minority men's HIV-risk behaviors has almost exclusively focused on the influence of social stress emanating from outside the gay community (e.g., heterosexist discrimination). However, converging lines of evidence have more recently suggested that sexual minority men also face stress from within their own communities.

Purpose: We sought to examine whether social stress from within the gay community (i.e., gay community stress) might influence sexual minority men's risk behaviors, including HIV-risk behaviors, over-and-above more commonly examined social stressors affecting this risk.

Methods: We tested whether gay community stress was associated with sexual minority men's HIV-risk behaviors in a large national survey of sexual minority men (Study 1), and experimentally tested gay community stress's impact on behavioral risk-taking and attitudes towards condom use (Study 2).

Results: Self-reported exposure to gay community stress was positively associated with HIV-risk behaviors when accounting for the effects of heterosexist discrimination, minority stress, and general life stress (Study 1). Participants who were rejected from an online group of other sexual minority men evidenced greater risk-taking in a subsequent risk-taking task and reported fewer perceived benefits of condom use when accounting for state affect than participants who were accepted by their online group (Study 2).

Conclusions: Sexual minority men's experiences of stress and rejection stemming from members of their own community may be an important and overlooked predictor of HIV infection and transmission.

4

2:00 PM-3:15 PM

INTIMATE RELATIONSHIP QUALITY AS A MECHANISM LINKING ADULT ATTACHMENT AND INDIVIDUAL HEALTH AMONG YOUNG SEXUAL MINORITY MALE COUPLES: A TEST OF THE RELATIONSHIP PROCESS FRAMEWORK

Tyrel J. Starks, PhD¹, Gabriel Robles, PhD²

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Background: Younger sexual minority men (YSMM, aged 18 – 29) face unique challenges in enacting intimate relationships. Experiences of stigma may lead to expectancies – or the anticipation – of rejection from romantic partners, with implications for both relationship functioning and health. Generally, relationships characterized by low levels of satisfaction, commitment and investment are associated with negative health outcomes. The Relationship Process Framework (RPF; Pietromonaco et al, 2013) suggests that Attachment-related beliefs (about the desirability of the self and the reliability of others) are associated with health through the mechanism of relationship functioning. The purpose of the current study was to test a model implied by RPF to predict drug use, a well-established correlate of HIV risk, among YSMM.

Methods: Baseline data were analyzed from 70 YSMM couples ($n_{\text{individuals}} = 140$) enrolled in a larger trial. Eligible couples were sexually active with relationship length ≥ 3 months. Both partners were aged 18 or over, identified as cis-gender male, and were able to communicate in English. At least one partner in each couple was 18-29 years old, reported drug use in the past 30 days, and was HIV-negative. The mean age was 27.01 years ($SD = 5.79$). Most YSMM identified as a racial minority (53.4%). Participants reported the number of days in the past 30 on which they used drugs. They also completed the Experiences with Close Relationships questionnaire and the Multiple Determinants of Relationship Commitment Inventory.

Results: Participants' perception of relationship rewards, costs, and barriers to leaving the relationship were positively associated with the use of drugs excluding marijuana; meanwhile, comparisons, alternatives, and investments were negatively associated with this outcome. Relationship functioning was unrelated to marijuana use. Attachment avoidance was negatively associated with positive dimensions of relationship functioning (rewards, comparison to ideal, and investment) and positively associated with negative dimensions (costs, alternatives, and barriers to leaving the relationship). In contrast, attachment anxiety predicted only negative aspects of relationship functioning (costs and barriers to leaving). All possible indirect pathways between adult attachment and the use of drugs other than marijuana (implied by significant observed direct effects) were statistically significant.

Conclusions: These findings support the RPF premise that attachment is associated with diminished satisfaction, commitment, and investment in relationships and predict the use of drugs other than marijuana through this mechanism. Findings support the development of behavioral interventions – particularly for drug use – that enhance relationship functioning and target cognitions within sexual minority men's close relationships.

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1

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INNOVATIVE TECHNOLOGY-BASED APPROACHES FOR ADDRESSING THE SEXUAL HEALTH NEEDS OF YOUNG SEXUAL MINORITY MEN

Mary A. Gerend, Ph.D.¹, Brian Mustanski, Ph.D.², Michael Newcomb, Ph.D.², Cynthia Cabral, Ph.D.³¹Florida State University College of Medicine, Tallahassee, FL; ²Northwestern University, Chicago, IL; ³PRIDE Research Consortium, New York, NY

Young gay, bisexual and other sexual minority men (YMSM) experience vast sexual health inequities relative to their heterosexual counterparts. Indeed, YMSM experience a disproportionate burden of the HIV epidemic in the United States, and YMSM of color have the highest rates of new infections compared to all other groups. Unfortunately, efforts to address the HIV epidemic have too often ignored the broader sexual health needs of YMSM, which has contributed to documented HIV prevention fatigue in this population. In addition to HIV prevention, YMSM express a need for information about developing a positive sexual self-image, finding and building healthy romantic relationships, having satisfying sexual relationships, and preventing other sexually transmitted infections. Furthermore, most sexual health interventions that have been developed to date do not consider the unique developmental contexts of adolescence, emerging adulthood, and young adulthood; YMSM in each of these developmental periods have differing needs that are not fully met by interventions developed for adult sexual minority men. Finally, most sexual health promotion programs for YMSM are available only to those who live in the largest urban centers in the United States, leaving vast disparities in sexual healthcare access across the country. The goal of this symposium is to highlight four innovative technology-based interventions that aim to address multiple facets of YMSM sexual health and have the potential to extend the reach of sexual health programs across the United States.

First, Dr. Mary Gerend will present data from a pilot randomized controlled trial assessing the feasibility, acceptability and preliminary efficacy of a text-message-based mHealth intervention that aims to promote sexual health and increase human papilloma virus vaccine uptake among YMSM. Second, Dr. Brian Mustanski with describe implementation strategies for eHealth interventions by presenting data related to the execution of a hybrid effectiveness-implementation trial of the Keep it Up! HIV prevention and sexual health promotion intervention for YMSM. Third, Dr. Michael Newcomb will use data from a pilot feasibility and ongoing randomized controlled trial to describe facilitators and barriers to the successful use of videoconferencing technology to deliver a relationship education and sexual health promotion program to young male couples across the United States. Finally, Dr. Cynthia Cabral will discuss the use of videoconferencing for a motivational interviewing intervention that aims to reduce HIV risk in adolescent sexual minority men, as well as the unique considerations in using this technology with adolescents. Together, these talks represent four novel and innovative strategies for extending the reach of sexual health interventions to YMSM across the United States.

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USING TEXT MESSAGING TO INCREASE HPV VACCINATION AMONG YOUNG SEXUAL MINORITY MEN: RESULTS FROM A PILOT RANDOMIZED CONTROLLED TRIAL

Mary A. Gerend, Ph.D.¹, Krystal Madkins, MPH², Shariell Crosby, B.A.², Aaron K. Korpak, B.A.³, Gregory L. Phillips II, Ph.D.³, Michael Bass, Ph.D.², Magda Houlberg, MD⁴, Brian Mustanski, Ph.D.²¹Florida State University College of Medicine, Tallahassee, FL; ²Northwestern University, Chicago, IL; ³Northwestern University; ⁴Howard Brown Health Center, Chicago, IL

Background: Men who have sex with men (MSM) are at high risk for cancers caused by human papillomavirus (HPV), such as anal cancer. A safe and effective vaccine is available to prevent HPV infection, yet vaccine uptake among young MSM remains low. Guided by theory and formative research, we developed a mobile health (mHealth) intervention called txt2protect to increase HPV vaccination among young gay and bisexual men. This study assessed the acceptability, feasibility, and preliminary efficacy of the intervention in a pilot randomized controlled trial.

Methods: Young MSM aged 18-25 were recruited from the Chicago area via social media and a local registry to participate in a 9-month sexual health program delivered via text messaging. After completing the baseline assessment, participants were randomly assigned to the treatment (n = 72) or control condition (n = 76). The treatment condition focused primarily on HPV vaccination, with only brief mention of other sexual health practices (e.g., condom use, PrEP, HIV testing), whereas the control condition focused on a variety of sexual health practices with only brief mention of HPV vaccination. Participants received daily text messages for the first three weeks and monthly text messages for the remaining ~8 months of the trial. Primary outcome measures included acceptability (satisfaction with the intervention), feasibility (recruitment and retention), and efficacy as determined by HPV vaccine initiation (i.e., receipt of the first dose of the 3-dose series) by the end of the trial.

Results: Participants in the treatment and control condition reported high levels of satisfaction with the program (scores > 4 on a 5-point scale) and scores were similar across conditions. Although retention in the trial was high with over 87% of participants completing the final 9-month assessment, some challenges related to participant recruitment were encountered. Rates of HPV vaccine series initiation were significantly higher among participants in the treatment condition (19.4%) relative to the control condition (6.6%), OR = 3.43 (95% CI: 1.17, 10.08).

Discussion: Findings suggest that txt2protect is a highly acceptable and potentially promising mHealth intervention for increasing HPV vaccination among young gay and bisexual men. Future research is needed to refine and strengthen the intervention and explore additional recruitment methods for extending its reach.

2

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ACCELERATING EHEALTH BEHAVIORAL INTERVENTIONS INTO PRACTICE: THE KEEP IT UP! HYBRID EFFECTIVENESS-IMPLEMENTATION TRIAL

Brian Mustanski, PhD¹, Nanette Benbow, M.A.², Kathryn Macapagal, PhD¹, C. Hendricks Brown, Ph.D.², Justin Smith, Ph.D.¹, Bruce R. Shackman, Ph.D.³, Benjamin P. Linas, MD⁴, Patrick Janulis, Ph.D.²

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Background: Despite substantial NIH investment in developing eHealth HIV interventions, little implementation research has examined strategies to effectively scale up these programs. To advance eHealth intervention implementation, we are conducting a county-randomized comparative implementation trial of two delivery approaches for Keep It Up! (KIU!), an online, CDC-best-evidence HIV prevention program for young men who have sex with men (YMSM) that just tested HIV negative. Strategy 1 is a traditional approach of community-based organizations (CBOs) integrating the program into their ongoing HIV testing operations. Strategy 2 is direct-to-consumer (DTC) strategy with home-based HIV/STI testing. This presentation describes the protocol for target county selection and outcome measures in the trial as an illustration of implementation research for behavioral interventions.

Methods: We reviewed geographic clustering of counties with 1,500+ YMSM. Standalone counties were automatically selected for inclusion. Among clustered counties, we selected the one with the most Black and Latino 18–29-year-olds and removed those directly adjacent, repeating this procedure until 64 counties were selected. Two adjacent counties were added based on topography.

Selected counties were stratified and randomized 2:1 to receive KIU! via the CBO or DTC strategy. Funding proposals were solicited from CBOs in the 44 CBO-strategy counties. Counties with successful CBO applicants were checked against the DTC counties to ensure balance. Outcomes for this type III hybrid trial follow RE-AIM, with the primary outcomes being impact (reach x effectiveness) and cost per infection averted. We also capture various metrics of adoption and implementation from YMSM self-report, KIU! meta-data, and CBO and DTC staff reports and interviews.

Findings: The CBO-strategy arm selected 14 CBOs for funding in the first round. A second funding announcement was released Fall 2019, with the goal of selecting another 8 CBOs, resulting in 22 counties per arm. The subsequent panel presentations will discuss the pragmatic design of each arm as well as the refreshing of the intervention technology to meet the demands of scalability.

Implications for Behavioral Interventions: Given the national urgency to end the HIV epidemic, understanding the best strategies to implement eHealth HIV interventions to reach the most people is critical to realizing the cost-effective scalability promised by such interventions. Careful selection of research targets and unobtrusive measures is critical to maintaining scientific rigor while remaining pragmatic in these studies.

3

2:00 PM-3:15 PM

USING VIDEOCONFERENCING TO EXTEND THE REACH OF RELATIONSHIP EDUCATION AND HIV PREVENTION FOR YOUNG MALE COUPLES

Michael Newcomb, PhD¹, Jim Carey, MPH²

¹Northwestern University, Chicago, IL; ²Northwestern University

Background: Young men who have sex with men (YMSM) bear a disproportionate burden of the HIV epidemic, and many new infections occur in the context of serious romantic relationships. Relationships also provide myriad benefits that promote mental and physical health. Thus, our team developed 2GETHER, an innovative relationship education and HIV prevention program for young male couples. This presentation will describe the adaptation of 2GETHER for remote administration via videoconferencing as part of a national randomized controlled trial, as well as barriers and facilitators to the use of this medium for intervention.

Methods: We adapted 2GETHER in two phases. Phase 1 included researching videoconferencing platforms, refining intervention content for online delivery based on literature review and expert consultation, and internal testing. In Phase 2, we conducted a pilot trial of the adapted intervention with 10 dyads (N = 20). Participants were diverse in terms of race/ethnicity, HIV status, and geographic location. After completing a baseline assessment, couples completed group skill building sessions, followed by individualized couple sessions for skill implementation. Upon completion, participants completed a 2-week posttest and exit interview.

Results: During Phase 1, we made several alterations to the group sessions to address participant fatigue. First, we split the 2 group sessions into 3 sessions to minimize loss of attention. Second, we pre-recorded videos of narrated PowerPoint slides of intervention content and sent them to participants 1 week prior to group sessions to facilitate briefer, more focused group discussions. The content and format of the individualized sessions were not altered. All group and individual sessions were conducted via BlueJeans videoconference, which we selected for its usability, ability to conduct group meetings with ease, and security features. During the Phase 2 pilot feasibility/acceptability trial, all participants completed all study components and reported few concerns with the format or content. In this pilot trial and the ongoing randomized controlled trial of this adapted intervention, we have identified several barriers to successful implementation of this approach, including difficulty conveying affect and building rapport via videoconference, distractions and loss of privacy in participants' home setting, and variations in access to sexual healthcare services by area of participant residence.

Discussion: Results support the feasibility and acceptability of delivering 2GETHER online via videoconferencing; we have been able to reach couples throughout the country with diverse relationship and sexual health experiences. Together with evidence of preliminary efficacy from the original pilot trial, 2GETHER shows strong promise of efficacy in addressing the health needs of young male couples across the U.S.

4

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VIDEOCONFERENCE MOTIVATIONAL INTERVIEWING WITH YOUNG SEXUAL MINORITY MEN (YSMM): OPPORTUNITIES AND CHALLENGES

Cynthia Cabral, PhD¹, Carly Wolfer, BA², Ore Shalhav, MPH³, Ali Talan, DrPH⁴, H. Jonathon Rendina, PhD, MPH⁵, Tyrel J. Starks, PhD⁶, Kathryn Macapagal, PhD⁷, David Moskowitz, PhD⁸, Michael Newcomb, PhD⁷, Brian Mustanski, PhD⁷

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Background: Younger sexual minority men (YSMM, aged 14-20) frequently do not have access to sexual health education that meets their unique needs, and report that any sexual health education they receive centers on the experiences of their cis heterosexual counterparts. YSMM are also at an increased risk for HIV transmission.

Methods: The Northwestern University SMART Project aims to address this concern by providing a comprehensive interactive online sexual health education program for YSMM intended to reduce participants' HIV and STI risk. If participants are not responsive to the online education component of the SMART program, they have the opportunity to be randomized to a brief Motivational Interviewing intervention delivered via videoconference (e.g., Facetime, Skype) delivered by Masters and PhD level e-coaches with mental health training. This discussion will focus on "lessons learned" for delivering a motivational interviewing intervention remotely with this population.

Results: To date, 185 participants have been randomized to the SMART e-coaching condition. Of these, 89 have engaged in at least one session of e-coaching and 75 have completed the e-coaching sessions. Unique challenges with this intervention strategy include negotiating boundaries during e-coaching calls, discussing and clarifying limits to confidentiality, managing inquiries from parents and guardians, and ensuring flexibility around scheduling e-coaching calls. Participants who have completed the e-coaching calls report a positive experience overall, stating that it was helpful to talk to the e-coaches about sex, safe sex practices, and their sexual identity as a YSMM.

Conclusions: Continued engagement and flexibility with YSMM are vital factors in the remote delivery of a motivational interviewing based intervention intended to reduce HIV/STI transmission. These findings support the continued development of such interventions for YSMM.

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TRANSLATIONAL RESEARCH ON GENDER AFFIRMATION AND HEALTH WITH TRANSGENDER COMMUNITIES TO INFORM PRACTICE AND POLICY

Jae M. Sevelius, PhD¹, Kristi Gamarel, PhD², Luz Venegas, BFA¹, Wesley King, MPH², JoAnne Keatley, MSW³, Racquelle Trammell²

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In the past two decades, there has been a notable rise in societal recognition of the experiences of transgender and gender diverse people. Researchers, clinicians, and policy makers are increasingly recognizing stigma and violence as drivers of health inequities. The Model of Gender Affirmation proposed by Co-Chair Dr. Sevelius has gained traction as a means of identifying avenues for intervention. The Model of Gender Affirmation proposes that unmet need for gender affirmation poses substantial health risks for transgender and gender diverse people. To inform efforts to address health inequities among transgender and gender diverse people, it is critical to build a stronger understanding of gender affirmation and its relationship to health and well-being. This symposium brings together cutting-edge empirical research all led by transgender and gender non-binary researchers to foster stronger understandings of gender affirmation in different health domains, as well as identify ways that this research can be translated to improve the provision of health promotion interventions. The presentations included in this symposium consider different types of gender affirmation (e.g., social, medical), experiences of gender affirmation (e.g., partner stigma, migration to urban enclaves), represent diverse transgender and gender diverse communities throughout the lifespan, and have implications for individual- to structural-level interventions. The first talk presents findings on Latina transgender women's experiences of gender affirmation as part of an ongoing pre-exposure prophylaxis (PrEP) demonstration project. The second talk characterizes the ways in which stigma within relationship contexts can undermine gender affirmation and serves as a precipitant to violence and avoidance of self-care among transgender women of color. The final talk presents qualitative data illustrating transgender young adults' migration stories to San Francisco for gender affirmation at the price of structural vulnerabilities. The discussion will be led by Ms. Joanne Keatley, a world-renowned leader in the field of global transgender health, with extensive expertise in community-engaged research with, for, and by transgender and gender diverse communities, and will focus on future directions for addressing gender affirmation across multiple levels in the field of behavioral medicine globally.

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1

2:00 PM-3:15 PM

“APOYO ENTRE NOSOTRAS” (SUPPORTING EACH OTHER): TRIUNFO, A PEER-NAVIGATION BASED MODEL TO PROVIDE INTERSECTIONAL GENDER AFFIRMING CARE TO TRANSGENDER LATINX

Luz Venegas, BFA¹, Luis Gutierrez-Mock, PhD², Arianna Salinas², Cinthya Herrera², Sophia Zamudio-Haas, DrPH², Kim Koester, PhD², Jae M. Sevelius, PhD¹

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Purpose: Transgender women continue to have the highest rate of new HIV infections of any population group in the US, due in large part to a lack of adequate services. When designing programs for Latinx transgender individuals, we must assess and address social and structural barriers to care. For transgender Latinx immigrants, these barriers may include language, legal documentation, employment, and transportation. *Triunfo*, a pre-exposure prophylaxis (PrEP) demonstration project located at La Clínica de la Raza in Oakland, California, uses a peer-navigation model to deliver gender affirming care in combination with immigrant specific services.

Methods: We nested an ethnographic study within a larger mixed methods evaluation to qualitatively assess the implementation and outcomes of *Triunfo*. We conducted participant observation of group medical appointments, social events, and support groups over the course of six months. We also conducted in-depth interviews with 15 participants and 3 key informants (physician, coordinator, and peer navigator). A Framework Approach guided analysis. We developed a structured codebook and used Dedoose to organize and code data.

Results: *Triunfo* has successfully enrolled 67 participants, many of who had never before received formal medical care. Most participants are immigrants and recent arrivals who sought asylum in the US. Peer navigators connect participants with a range of services relevant to the intersectional needs of immigrant trans Latinx communities. At La Clínica, clinicians provide sexual health prevention and treatment services, hormone replacement therapy, and referrals for gender affirming surgeries. Peer navigators schedule and escort participants to obtain identification, name changes, legal-status support, and other services as needed outside of the clinic. Social support is provided through monthly groups, social events, and casual dinners. The social, structural, and clinical aspects of *Triunfo* are woven together in a way that feels seamless to participants.

Conclusions: *Triunfo* redefines and broadens the meaning of healthcare to include the social, mental, and overall wellbeing of participants. By providing care that is compassionate and culturally competent, this intervention successfully served a group of Spanish speaking transgender women and connected them with crucial services, including PrEP.

2

2:00 PM-3:15 PM

A “QUEER TAX” ON HEALTH AND INCLUSION: THE COSTS OF MIGRATION FOR TRANSGENDER PEOPLE SEEKING INCLUSIVE SERVICES AND COMMUNITY SUPPORT IN THE SAN FRANCISCO BAY AREA

Wesley King, MPH¹, Kristi Gamarel, PhD¹, Don Operario, PhD², Raha Mouzoon, MPH³, Victorine Stanislaus, MD⁴, Mariko Iwamoto, MA⁴, Sabrina Suico, BA⁴, Tooru Nemoto, PhD⁴

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Purpose: Transgender (trans) refers to individuals whose gender identity differs from culturally prescribed expectations associated with their assigned sex at birth. Many trans people seek gender affirmation across different domains. Evidence documents unmet gender affirmation needs place trans young adults at risk for a myriad of adverse health outcomes including HIV, non-prescribed hormone use and substance use. As a result, trans young adults may migrate to urban enclaves to fulfill their gender affirmation needs such as obtaining trans-inclusive healthcare and community support. This study explored the experiences and consequences of migration on trans young adults who migrated to San Francisco (SF) Bay Area to access gender affirmative health services and support.

Methods: A convenience sample of 60 trans young adults ages 18 to 29 (32% non-binary, 28% trans women, and 40% trans men) participated in a one-time qualitative interview as part of a larger study of hormone use and substance use. Qualitative interviews were audio-recorded and transcribed. We used thematic analysis to develop and refine the codes and themes.

Results: Two themes emerged regarding migration and gender affirmation needs: (1) gender affirmation experiences and (2) the price or “queer tax” for gender affirmation. Participants described how gender affirmation needs across healthcare and social domains were met upon moving to SF. However, migration placed many participants at risk for other structural vulnerabilities, including homelessness, employment discrimination, and racial discrimination in healthcare settings. Despite these vulnerabilities, participants were willing to “pay” this price in order to gain trans-related safety and affirmation.

Conclusions: Our findings underscore the importance of understanding how unmet gender affirmation needs and urban migration may place trans young adults at greater risk for adverse structural conditions that can determine health outcomes. Future research and interventions are needed to address gender affirmation needs beyond urban enclaves and reduce health disparities among trans populations.

3

2:00 PM-3:15 PM

THE MANIFESTATIONS OF STIGMA WITHIN THE RELATIONSHIPS OF TRANSGENDER WOMEN OF COLOR: IMPLICATIONS FOR GENDER-AFFIRMING HIV PREVENTION INTERVENTIONS

Racquelle Trammell¹, Lilianna Reyes, MPA², Laura Jadwin-Cakmak, MPH³, Cierra Burks², Bré Rivera, BA², Gary W. Harper, PhD, MPH⁴, Emily Arnold, PhD⁵, Kristi Gamarel, PhD¹

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Purpose: Transgender women of color are disproportionately affected by the HIV epidemic. One of the most consistently reported contexts for HIV transmission and acquisition among transgender women is within romantic partnerships. Transgender women experience intersectional stigma across all areas of their lives, including within romantic partnerships. Relationship stigma –the anticipation of negative treatment based on being in a relationship with a member of a stigmatized group –has been linked to adverse HIV and other health outcomes; however, there has been limited research to document the nuances of the relationship stigma experienced by transgender women of color. The current study sought to understand how transgender women of color experience relationship stigma and its impact on their health.

Methods: We conducted 5 focus groups (n=33) between January and March 2019 with transgender women of color as part of the Love Her Collective – a community-academic partnership. The overall goal of the study was to identify the HIV-related health needs of transgender women of color in Detroit, Michigan. Qualitative interviews were audio-recorded and transcribed. We employed a phenomenological analytic approach to develop and refine emerging themes related to relationship stigma.

Results: Participants ranged in age from 18 to 66 (M=31, SD=13); 79% identified as Black, and 18% identified as Multiracial. In total, 63% identified as living with HIV and 29% did not know their HIV status. Four overarching themes emerged: 1) Forms of enacted relationship stigma that undermine gender affirmation needs; 2) Complex association between enacted relationship stigma and internalized intersectional stigma; 3) Enacted relationship stigma as an antecedent to intimate partner violence, and 4) Enacted relationship stigma undermining health-promoting behaviors, including healthcare seeking.

Conclusions: Findings support the importance of gender-affirming approaches to health promotion and HIV prevention that account for the various ways that transgender women of color experience stigma. Approaches that account for the nuanced ways that relationship stigma undermine women's self-care, including linkage to and engagement in HIV prevention services are needed. Future research on gender-affirming intervention approaches to target the manifestations of relationship stigma in order and increase the use of HIV prevention strategies among transgender women of color will be discussed.

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Paper Session 34

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INOCULATING AGAINST FLU VACCINE MISINFORMATION: A TEST OF 3 INTERVENTIONS

Niraj Patel, PhD¹, Laura D. Scherer, PhD²

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Purpose: Many people believe that the influenza vaccine can cause the flu, and this myth may be one reason for low flu vaccination rates. Correcting this misperception is important, but misinformation corrections are rarely completely effective at changing beliefs because they can be less memorable than misinformation, or leave people with incomplete mental models (e.g., fail to explain how a person could become sick with flu-like illness after receiving the vaccine). We therefore tested three interventions to reduce beliefs in this vaccine myth: a didactic message, an explanatory message, and a narrative message.

Methods: 1119 men and women age 18-73 (M=32, SD=12; 73% White, 11% African American) completed an online survey. Participants first reported their belief that the flu vaccine causes the flu. Then they were randomized to one of four conditions: Control (no correction), basic CDC statement that the flu vaccine does not cause the flu, a more thorough explanation of why a person might get sick after the vaccine, and 4. a narrative that contained all of the aforementioned information. After the intervention, participants reported their belief in the myth and their vaccination intentions. Next, participants read a short stories suggesting that the flu vaccine does cause the flu, and then stated their beliefs and intentions again.

Results: A 4 (Condition) × 2 (Time: Time 1 vs. Time 2) ANOVA on belief in the myth revealed a 2-way interaction, (F(3, 1036)=5.50, p< .001, =.04. All of the interventions increased rejection of the myth to the same degree (ps< .001) whereas there was no change in the control condition (p=.10; see Figure below). A 2-way interaction also emerged comparing Time 2 vs. Time 3 (F(3, 1037)=3.42, p=.017, =.01); all conditions showed a decrease in myth rejection at Time 3, but the thorough correction and narrative conditions showed greater resistance to the biasing stories. No intervention affected vaccination intentions.

Conclusions: Didactic corrections (“the flu vaccine does not cause the flu”) reduced beliefs in the myth, but more thorough explanatory corrections may be more effective at inoculating against further misinformation. Vaccination intentions were unaffected by the interventions, which points to other concerns or perceived barriers that may prevent vaccination.

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Paper Session 34

3:45 PM-4:00 PM

COUNTERING ANTIVAX MISINFORMATION VIA SOCIAL MEDIA PLATFORMS: MESSAGE-TESTING EXPERIMENTS FOR HPV VACCINATION UPTAKE

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Background: Myths and negative attitudes toward the human papillomavirus (HPV) vaccine are common, in part, due to the prevalence of misinformation. We sought to test the relative effectiveness of various messages about HPV vaccination, with the goal of identifying a set of messages that can be used on social media to change parents' attitudes toward the vaccine and their intentions to vaccinate their child(ren).

Methods: We generated two cohorts for the message-testing experiments: 1) a local sample of residents from NH and VT and 2) a national sample (total n = 1,672). Eligible participants were parents who had at least one child (n = 1,040). Based on the results from our virtual focus groups, we identified five campaign themes to target (distrust of the healthcare system, safety concerns, effectiveness concerns, connection to sexual activity, and misinformation about the vaccine). We developed five experimental messages for each of the themes, and six control messages about e-cigarettes. After completing pre-test measures, participants were randomly assigned to one message, which was presented in a simulated social media environment. After message exposure, participants completed post-test questions to measure changes in their attitudes toward the vaccine and behavioral intentions to vaccinate their child(ren) against HPV.

Results: The experimental messages significantly increased positive attitudes toward HPV vaccination, compared to the control messages ($t = 3.03$, $p = .003$). Parents' behavioral intention to vaccinate their child(ren) against HPV was significantly associated with the increase in positive attitudes toward HPV vaccination ($Pearson\ r = 1.14$, $p = .05$). According to the structural equation modeling, messages countering such themes as—distrust of the healthcare system, effectiveness concerns, connection to sexual activity, and misinformation about the HPV vaccine—were likely to increase behavioral intention, in part, due to the increased positive attitudes toward the vaccine (RMSEA = .014, CFI = .91, SRMR = .031). Among the messages focused on correcting misinformation about the vaccine, those addressing the effects of the HPV vaccine for cancer prevention and messages directly countering misinformation (e.g., the vaccine causes death) were effective in increasing parents' behavioral intention to vaccinate.

Conclusion: Social media can offer the opportunity to change attitudes and behavioral intentions toward HPV vaccination, rather than just facilitating the spread of misinformation. Messages about HPV vaccination were tested in a controlled setting simulating social media, and we identified messages and themes that were effective in changing attitudes and behavioral intention to vaccinate against the HPV. Given how ubiquitous social media is today, promoting tested messages—such as ours—on social media may play an important role in cancer prevention.

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Paper Session 34

4:00 PM-4:15 PM

SAFER \neq SAFE: DEVELOPING AN ANTI-VAPE MESSAGE FROM THE TRUTH ANTI-TOBACCO CAMPAIGNElizabeth C. Hair, PhD¹, Jessica M. Rath, PhD, MPH, CHES¹, Erin J. Miller Lo, MPH¹, Alexis A. Barton, PhD, MS¹, Siobhan N. Perks, MPH¹, Donna Vallone, PhD, MPH¹¹Truth Initiative, Washington, DC

When **truth**, a national, mass-media, youth-smoking prevention campaign launched in 2000, nearly a quarter of all U.S. youth smoked cigarettes. Today, the rate of vaping among youth has been rising, up to 21% in 2018, putting **truth** back where it started. Using the lessons learned from almost 20 years of communicating to youth and young adults about tobacco, **truth** launched their first anti-vaping campaign, Safer \neq Safe, in October 2018. This study outlines the formative research strategies that informed the content of the campaign and the ongoing methods of evaluating its impact among young people. The campaign's strategy draws from the behavior change literature, which theorizes that knowledge, attitudes, and beliefs towards tobacco use can influence intentions, which in turn influence behavior.

First, substantiated e-cigarette-related facts were tested through surveys and focus groups for their ability to capture the attention of young people, while informing and motivating them. Second, mobile ethnographies, focus groups, and in-home interviews were used to understand how the audience thinks about tobacco and vaping. Using these results, ads were developed and copy-tested for their impact (percent of anti-vape attitudinal change); message comprehension; emotional response profile (positive passion, disgust, outrage); and **truth** brand equity attributes. Finally, the ads' in-market performance was evaluated by continuously monitoring target audience feedback via a media tracking study, assessing ad awareness, receptivity, and vape knowledge and attitudes among a sample of 240 youth and young adults per week.

Qualitative research indicated that vaping represents a gray area for youth and young adults. They believe it is better than smoking, but aside from a conscious desire to be part of this latest trend, their vape knowledge is lacking. Thus, facts that increased knowledge about nicotine content and health consequences were perceived as motivating and informative. Copy-testing showed that the ads had high likeability, strong perceived relevancy, and clear communication of the "safer is not the same as safe" message. The in-market testing showed increases in important vape knowledge; notably, a 23% decrease in agreement that "vaping/using e-cigarettes including JUUL is safe." As tobacco use patterns shift and new products emerge, evidence-based public education campaigns can play a key role in changing tobacco related knowledge among young people.

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Paper Session 34

4:15 PM-4:30 PM

MEETING JUULERS WHERE THEY ARE: USING ETHNOGRAPHY AS A TOOL TO ASSESS ATTITUDES AND MOTIVATIONS

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For mass-media prevention messaging to be an effective tool at the population level, it is crucial to understand the target audience. While there are now decades of literature and knowledge surrounding the use of cigarettes among youth, there remains a dearth of much needed qualitative research exploring the knowledge, attitudes, and habits of youth and young adult e-cigarette users, including JUUL users. Given the meteoric rise of JUUL in the e-cigarette marketplace, it is critically important to reach out to youth and young adults to understand the motivations of the young people for whom JUUL and other similar products have been so appealing. To that end, Truth Initiative conducted qualitative ethnographic studies with vapers, primarily JUULers, with the goal of successfully messaging to these young people in truth's® future prevention messaging campaigns.

Taking a multi-faceted approach, Truth Initiative incorporated mobile surveys, in-home ethnographies, and qualitative focus groups as part of a systematic study of young JUULers. Trained facilitators spoke with 38 current or potential JUUL users aged 15 to 24 across the country who were high school students, college students, or recently graduated. Topics discussed were key to understanding this demographic, from tastes, lifestyles, and habits, to attitudes and behaviors, and how young people in this generation see themselves and their roles in society. Finally, Truth Initiative explored how these young people use e-cigarettes and JUUL, the benefits, both social and emotional, that they receive from their e-cigarette use, and the motivations behind product use.

The findings were revealing: while young people generally believe that vaping is less harmful compared to smoking, their understanding of the risks associated with vaping tend to be minimal. JUULing is ubiquitous, so much so that the activity is a verb on its own – and most participants expressed the desire to be part of the trend. Participants indicated that the product also serves as a security blanket of sorts, much like a drink or phone in one's hand, and is a conversation starter at parties and in groups.

Understanding the appeal of JUUL and the role it serves in the lives of youth and young adults is critical to making progress toward changing young peoples' attitudes and behaviors, and in taking steps to curb the epidemic of youth vaping and JUULing.

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Paper Session 34

4:30 PM-4:45 PM

MISINFORMATION AND OTHER ELEMENTS IN HPV VACCINE TWEETS: AN EXPERIMENTAL COMPARISON

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Background: Misinformation about HPV vaccination posted on social media has the potential to discourage vaccination by increasing vaccine hesitancy. We sought to examine how four key messaging elements of social media affect parents' motivation to get the HPV vaccine for their children, trust in social media content, and perceived risk about HPV-related diseases.

Methods: In 2017-2018, we surveyed a national sample of 1,206 U.S. parents of children aged 9 to 17 years. We developed 16 experimental tweets that varied in four messaging elements: sentiment (accurate or misinformation), source (person or organization), narrative style (storytelling or scientific data), and topic (effectiveness or safety). Content was slightly modified from real tweets posted in June and July 2017 (median reading level was grade 7). We randomly assigned parents to one tweet using a 2 x 2 x 2 x 2 between-subjects factorial experiment. After viewing the tweet, the survey assessed parent's motivation (main outcome) as well as parent's trust in the tweet and perceived risk (secondary outcomes).

Results: Accurate tweets elicited higher HPV vaccine motivation than tweets with misinformation (25% vs. 5%, OR=6.23, 95% CI: 4.15, 9.33). Similarly, motivation was highest for tweets from organizations versus persons (20% vs. 10%, OR=2.41, 95% CI:1.70, 3.41) and about effectiveness versus safety (20% vs. 10%, OR=2.52, 95% CI:1.77, 3.57). No interactions among sentiment, source, narrative style, or topic were statistically significant for motivation. The impact of the manipulations on motivation was mediated by perceived risk and trust.

Conclusions: Tweets with misinformation may undermine parents' motivation to get HPV vaccine for their children in our national online experiment. Social media campaigns may help to increase public trust in vaccination.

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Paper Session 35

3:30 PM-3:45 PM

SUCCESS STORIES: NIH'S ROLE IN CLOSING EVIDENCE GAPS AND INFORMING USPSTF CLINICAL PRACTICE RECOMMENDATIONS

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Background: Although NIH-funded breakthroughs have undoubtedly contributed to improvements in health, knowledge accumulates slowly and unpredictably, making it challenging to quantify NIH's real-world impact. To this end, we examined the extent to which NIH-funded research has informed U.S. Preventive Services Task Force (USPSTF) recommendations about preventive health care services. USPSTF recommendations shape primary care delivery and health insurance coverage policies, two factors critical to disease prevention.

Methods: When the USPSTF deems the evidence insufficient to issue a recommendation for or against providing a service, they issue an "I" (insufficient evidence) statement and outline evidence gaps that need attention in future research. Periodically, the USPSTF reassesses the evidence base to determine if a recommendation can be made. We identified 7 I Statements that were upgraded to definitive recommendations based on new evidence ("Success Stories") between 2012 and 2018. All relevant citations in the systematic evidence review that informed the USPSTF upgraded recommendation were identified. For each citation, study design characteristics, funding information, and bibliometric measures were captured.

Results: Up to 67 ($M = 33$) articles were cited in each systematic review; one-half of the studies reported in the articles were conducted in the U.S. Fourteen NIH Institutes collectively funded 37% (range: 17-79%) of the articles cited. R- and U-series grants were the most common, but intramural, contract, and other funding mechanisms were also used. Although most (84.5%) reported randomized trial results, cohort, cross-sectional, and case-control designs were also employed. Using relative citation ratios, study impact was higher for NIH-funded ($M = 12.77$) than non-NIH funded ($M = 7.04$) research. There was considerable diversity across Success Stories in study design characteristics, funding sources, and clinical reach via citations in guidelines issued by professional organizations.

Conclusions: NIH played an important role in supporting research needed to fill USPSTF evidence gaps. Given the diversity of funding mechanisms and study designs represented, fostering the science needed to fill remaining evidence gaps may likewise require creative and pragmatic study designs and funding opportunities. Successfully addressing USPSTF evidence gaps can contribute to meaningful improvements in population health.

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Paper Session 35

3:45 PM-4:00 PM

A SCOPING REVIEW OF THE STATE OF STRENGTH TRAINING BEHAVIOUR CHANGE INTERVENTIONS

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Background: Despite the benefits to muscle strength, physical function/independence, and cardiometabolic health, as little as 6% of the population are meeting the guidelines for strength training (ST) twice a week. Barriers to ST (e.g., knowledge of technique and prescription parameters, perceived complexity, and need for equipment) suggest interventions targeting this behaviour are unique from general physical activity or aerobic activity. The objective of this scoping review is to comprehensively summarize the current state of behaviour change interventions for promoting ST participation.

Method: Using the scoping review methodology by Arksey and O'Malley (2005), we searched electronic databases (Medline, Embase, PsychINFO, and PubMed), reference lists, and consulted experts in the field. Articles were included if they i) employed an intervention to promote ST and ii) ST participation was an outcome. Article screening was conducted by two independent reviewers and data extraction was performed by one reviewer and verified by a second reviewer. Study characteristics and interventions factors were extracted. Interventions were coded using the BCT Taxonomy v1.

Results: We identified 32 articles reporting on 24 unique interventions. Studies were primarily randomized controlled trials (75%), conducted amongst older adults (38%) and/or a wide range of populations with chronic disease or disability (67%). Among interventions that are theory-based ($n = 11$), 82% used social cognitive theory (SCT) and the rest used the transtheoretical model (TTM). The majority of interventions were delivered face-to-face (96%), by an exercise specialist (63%), in community or home settings (83%) with a variety of exercise prescriptions used across studies. A median of 9 BCTs were used (minimum: 4, maximum: 19). The most common BCTs included adding objects to the environment ($n=20$), instructions on how to perform the behaviour ($n=20$), graded tasks ($n=18$), and behavioural practice/rehearsal ($n=18$).

Conclusion: Several research questions remain unanswered in the field of strength training behaviour change. Research that addresses the lack of diversity in theory and intervention factors employed may benefit from examining theories outside of SCT and TTM, alternatives to exercise specialist intervention deliverers and the face-to-face mode of delivery, testing of optimal exercise prescription parameters for promoting adherence, and underexplored BCTs that address ST-specific barriers.

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CITATION AWARD WINNER

Paper Session 35

4:00 PM-4:15 PM

DHC PRESENTS: THE ROLE OF BEHAVIOR MEDICINE IN THE EVOLVING WORLD OF DIGITAL HEALTH.

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Background: The Society of Behavioral Medicine (SBM) has established its Digital Health Council (DHC) in 2014. The DHC's mission is to envision what the digital health field will look like in the future and prepare SBM and its membership to be at the forefront of the field. Towards this end, a 2019 DHC initiative was to develop a digital health roadmap, highlighting its impact on the field of behavioral science. The project aimed to assess current digital health needs and interests within SBM, and to gather expert insights on the evolution of the field.

Methodology: SBM Survey: 346 SBM members completed a survey on their digital health needs and interests.

Stakeholders Interviews: 15 digital health experts were interviewed on their perspective of the anticipated evolution of the digital health field, as well its implications for behavior science.

Results: SBM Survey: 77% reported experience with digital health projects, and 65% of those with no experience expressed interest to engage with digital health. Current barriers and difficulties reported included collaboration or communication difficulties, finding the right partners, and institutional support difficulties. Respondents reported needing SBM's support for their digital health endeavors, through: webinars, networking opportunities, or collaboration platforms.

Stakeholders Interviews: Experts anticipated the following changes: 1) Digital healthcare landscape will be shaped by payment/reimbursement models; 2) Digital health solutions will have an increasingly recognized impact and will widen access to care; 3) Technology will usher in precision behavioral medicine; 4) Technology will be seamlessly integrated into daily life and into the process of receiving care; and 5) Models of behavior change will evolve. The following implications and recommendations for behavior science emerged from the interviews: 1) Set up cross-sector partnerships and multi-disciplinary collaborations; 2) Ensure that digital health solutions are indeed set up to widen access to care for everyone; 3) Develop digital health solutions that will meet the rigors of digital therapeutics; 4) Advance new methodologies and more refined theories of behavior change.

Implications: SBM is uniquely positioned to meet the digital health field's evolution and to prepare its members to meaningfully contribute to it by utilizing the infrastructure, talent development and collaboration opportunities that it provides. Further necessary initiatives and efforts will be highlighted.

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Paper Session 35

4:15 PM-4:30 PM

PILOT STUDIES PRESENTED AT THE SOCIETY OF BEHAVIORAL MEDICINE

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Introduction: Among all published intervention articles, the proportion of those identified as pilot studies has increased from < 2% in 1974 to 9.7% of in 2018. This proliferation of pilot studies may still underestimate the actual count of all pilot studies conducted potentially due to common pilot study attributes (e.g. small sample size, varying methodological rigor). The extent to which publication bias occurs within pilot studies is unknown yet can prove useful when evaluating published pilot studies to determine whether those appearing in peer-reviewed journals are fundamentally different than those that go unpublished.

Methods: Annual Meeting Supplements containing the abstracts presented at the Society of Behavioral Medicine (SBM) were obtained for years between 2006 and 2017. Each year was systematically searched using the terms "pilot" or "feasibility" or "preliminary" or "exploratory" to identify all pilot studies presenting on a behavioral intervention. Behavioral interventions were defined as studies designed to test the feasibility of a behavioral intervention and/or provide evidence of a preliminary effect(s). Abstracts which reported pilot protocols, mechanistic studies conducted in laboratories or clinical settings as well as scale, tool or device development were not retained. The title, body, authors on each abstract was used to link it to published studies by searching publication databases, author's curriculum vitae, ResearchGate, and Google Scholar. Publications were matched to SBM abstracts if the publication reported identical intervention components including duration, location, and target population though they could vary on reported sample population by +/- five participants. Publications which later published presented abstracts findings as single arms of multi-arm trials were excluded.

Results: Of the 12,915 abstracts from the Annual Meeting Supplements, 500 (3.9%) were pilots. In 2006, 1.7% of all abstracts published for SBM were pilot behavioral interventions; that rate increased to 4.8% in 2017. The number of total abstracts presented at SBM increased 132% from 2006 to 2017 (747 to 1734) while pilot abstracts increased by 538% (13 to 83). Slightly less than half (45%) of all presented pilot behavioral interventions were published. Characteristics differentiating published vs. non-published pilot behavioral interventions are currently being compared and results will be presented.

Conclusion: Pilot studies are often endorsed as a necessary step in the development of large-scale behavioral intervention. The proportion of pilot behavioral interventions that go unpublished is large, suggesting clear publication bias with those that eventually appear in the peer-reviewed literature. The analysis of the pilot abstract characteristics and their association with publication will shed light on potential biases in published pilot studies.

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Paper Session 35

4:30 PM-4:45 PM

PERSPECTIVES ON THE VALIDATION OF BEHAVIOR CHANGE INTERVENTIONS

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Background: Because behavior change is complex and interventions fail for many reasons, researchers have called to evaluate behavior change interventions not just based on whether they effect behavior change, but also on whether they successfully affect the *mechanism* they target (i.e., how the intervention is supposed to work). For example, interventions designed to work by enhancing self-efficacy can be evaluated both on whether users change their behavior and on whether users' self-efficacy increases. Such calls have focused on evaluating interventions based on how researchers intend them to work. But before evaluating whether an intervention works, how can we tell if it successfully implemented intended mechanisms in the first place—i.e., how can we validate the intervention?

Purpose: We explored issues surrounding validation in a multi-step study to design interventions to encourage hospitalized patients to prevent medical errors.

Methods: We designed several low-fidelity behavior change intervention prototypes for hospitalized patients, aimed at encouraging them to speak up regarding concerns about their care. Each prototype targeted a particular mechanism of change in the Integrated Behavioral Model (IBM). We conducted a small-scale validation study (n=7) of these prototypes, asking researchers specializing in health behavior change interventions ("experts") to map prototypes onto mechanisms in the IBM, and interviewed experts (n=4) about their attitudes towards the creation and evaluation of theory-based interventions. We conducted semi-structured interviews with hospitalized patients (n=15), probing for their responses to validated prototypes, and coded their responses for mechanisms of change named in the IBM.

Findings: End users (hospitalized patients) and experts at times diverged in their interpretations of what mechanisms an intervention targeted. Experts themselves often disagreed about how interventions were supposed to work: only 6 of 24 prototypes achieved an average Cohen's kappa of .41 or more. Disagreement about the mechanism of interventions resulted both from the design of interventions and from differing ideas about the inherent relationships between mechanisms.

Conclusion: Individuals respond differently even to targeted interventions. Researchers should employ methods such as user interviews or measurement of multiple possible mechanisms to understand why behavior change interventions succeed or fail, and to contribute to knowledge about interrelationships between mechanisms and design.

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Paper Session 36

3:30 PM-3:45 PM

BASELINE LEVELS OF HABITUAL PHYSICAL ACTIVITY PREDICT WEIGHT LOSS DURING A 24-WEEK SUPERVISED AEROBIC EXERCISE INTERVENTION

Christoph Höchsmann, PhD¹, James L. Dorling, PhD¹, John W. Apolzan, PhD¹, Neil M. Joannsen, PhD¹, Daniel S. Hsia, MD¹, Corby K. Martin, PhD²¹Pennington Biomedical Research Center, Baton Rouge, LA; ²Pennington Biomedical, Baton Rouge, LA

Background: Exercise is recommended for weight management; however, exercise-induced weight loss often is less than expected based on measured energy expenditure. This discrepancy is called weight compensation and results primarily from exercise-induced increases in energy intake. It is unknown if factors pertaining to one's lifestyle prior to starting an exercise program affect weight compensation and its mechanism. The purpose of this analysis was to determine if habitual physical activity (PA) levels at baseline predict weight change, weight compensation, and changes in energy intake during a 24-week supervised, controlled aerobic exercise intervention.

Methods: Data from 108 participants [48.7 (SD 11.6) years, 31.4 (SD 4.6) kg/m²], randomized to either the moderate-dose exercise group (8 kcal/kg body weight/week; KKW) or the high-dose exercise group (20 KKW) of the E-MECHANIC trial, were analyzed. Baseline habitual PA was measured with SenseWear arm-bands over a 2-week period with a minimum of 95% required wear time for a valid day (22h and 48 min). Energy intake was measured with doubly labeled water over 2 weeks, before and after the intervention. Multiple linear regression models, adjusted for sex, exercise group, and baseline value of the outcome were used to estimate the effect of baseline habitual PA on weight change, weight compensation, and change in energy intake.

Results: At baseline, participants spent a median of 44 (IQR 31-73) min/day in moderate-to-vigorous PA (≥ 3 METs). We found negative associations between baseline habitual PA levels and weight change ($\beta = -0.28$; $p = 0.02$), weight compensation ($\beta = -0.24$; $p = 0.04$), and change in energy intake ($\beta = -0.32$; $p < 0.01$). For every 15 min/day decrease in habitual PA at baseline, participants lost 0.23 kg less weight, compensated 0.20 kg more, and increased daily energy intake from to baseline to follow-up by 21.5 kcal/day more.

Conclusions: Habitual PA levels before the start of exercise predicted weight change, compensation, and energy intake changes. Participants with lower baseline habitual PA levels lost less weight from exercise, had higher compensation, and increased energy intake. These results indicate that less active people, who are in the most need of the health benefits of exercise, fail to fully realize these benefits when engaging in an exercise program. Research is needed to understand why this occurs and to develop strategies to mitigate this detrimental effect.

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MERITORIOUS AWARD WINNER

Paper Session 36

3:45 PM-4:00 PM

WEIGHT DISCRIMINATION EXPERIENCED PRIOR TO ENROLLING IN A BEHAVIORAL OBESITY INTERVENTION REDUCES TREATMENT RESPONSE

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Background: Weight discrimination is associated with a host of negative outcomes, including depression, unhealthy and disordered eating behaviors, and reluctance to engage in weight-control behaviors. Less is known about the impact of weight discrimination on weight loss, especially in the context of behavioral obesity interventions. Prior research suggests that weight stigma may reduce weight loss in behavioral interventions, but the small and predominantly Caucasian samples limit generalizability of previous findings. Moreover, few studies have considered whether body mass index (BMI) may account for the relationship between weight discrimination and weight loss. The current study evaluated the impact of weight discrimination on program attendance and weight loss among a cohort seeking treatment for obesity. Associations between weight discrimination and depressive symptoms were also examined.

Methods: Participants (N=304; BMI=35.9 kg/m²; 55% African American; 95% women) were enrolled in a 16-week, evidence-based weight loss program that included weekly group sessions. At baseline, participants reported on their experiences of weight discrimination across different settings. Depressive symptoms were measured using the CES-D at baseline. All analyses adjusted for race and baseline BMI.

Results: Participants who experienced weight discrimination reported greater depression at baseline (B=3.59, 95%CI: [1.76, 5.42], p< 0.001). Weight discrimination was not associated with session attendance during the 16-week program (B=-0.64, 95%CI: [-1.97, 0.69], p=0.35), but it was associated with lower weight loss percentage post-intervention (B=0.02, 95%CI: [0.01, 0.04], p=0.001). Specifically, those reporting weight discrimination prior to starting the program lost 2.4% less weight compared to individuals without a history of weight discrimination.

Conclusions: Prior experiences of weight discrimination were associated with diminished weight loss in this behavioral obesity intervention, despite similar attendance rates. This suggests weight discrimination may not deter motivation to attend weight loss interventions. Given the observed associations between discrimination and increased depressive symptoms, future research is needed to explore whether the presence of depressive symptoms may account for the potential impact of perceived discrimination on treatment response.

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Paper Session 36

4:00 PM-4:15 PM

BEHAVIORAL WEIGHT-LOSS PROGRAMS WITH EXTENDED CARE LEAD TO LONG-TERM IMPROVEMENTS IN GLYCEMIC CONTROL

Vivian Bauman, M.S.¹, Michael Perri, PhD², Meena N. Shankar, MS, RD, CCRC¹, Kathryn M. Ross, Ph.D., M.P.H.¹, Abraham J. Eastman, M.S.¹, Brittney N. Dixon, MPH¹, Umelo A. Ugwoaba, B.S.¹, Andrea N. Brockmann, M.A.¹, Charlayne A. Scarlett, M.P.H.¹¹University of Florida, Gainesville, FL; ²University of Florida, College of Public Health and Health Professions, Gainesville, FL

Introduction: Behavioral weight-loss programs produce weight changes associated with reduced diabetes risk, however, weight regain remains a substantial challenge. Continued contact via extended care programs has demonstrated promise for improving weight-loss maintenance; however, it remains unclear what effect these programs have on glycemic control. Thus, we compared the effect of three extended care programs (delivered via group telephone counseling, individual phone counseling, or email) on long-term changes in glycated hemoglobin (A1c) among adults with obesity and poor glycemic control.

Methods: The study included 267 adults with obesity (female=83.9%, white=77.2%; M±SD: age= 55.9± 9.8 years; BMI=36.5±3.4 kg/m²) and baseline A1c levels in the abnormal range (5.7% and higher; M±SD: A1c=6.0±0.3%). Following completion of the 4-month behavioral weight-loss program, participants were randomized to one of three extended care conditions: email-only (n=95), individual phone calls (n=83), or group phone calls (n=89). A1c and weight were measured at baseline, month 4, and month 22. Effect of extended care condition on A1c and weight was assessed using repeated measures ANOVAs with Bonferroni post-hoc testing.

Results: Participants maintained a mean (SE) weight loss of 5.8% (0.6%) initial body weight and A1c reduction of 0.26% (0.03%) from baseline to month 22 (p< .001). Weight change during this time was positively associated with A1c change, such that larger reductions in weight were associated with greater A1c improvements (r=.27, p=.001). Participants achieved the following mean (SE) reductions in A1c over 22-months: email, 0.27% (0.05%), p< .001; individual phone calls, 0.30% (0.06%), p< .001; group phone calls 0.22% (0.06%), p=.001. There were no significant differences in 22-month weight and A1c reductions between groups (ps >.05).

Discussion: Results demonstrated that a behavioral weight-loss program with extended care delivered via individual phone calls, group phone calls, or email, produced significant changes in weight and HbA1c over a 22-month period. These findings suggest that behavioral weight-loss treatment programs with telephone and email-based extended care can improve blood-glucose control in both the short-and-long-term. Future studies should consider cost-effectiveness of these various treatment options.

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Paper Session 36

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FACTORS CONTRIBUTING TO RE-HOSPITALIZATION AFTER BARIATRIC SURGERY

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Obesity is a major health concern in the United States, with 41.2% of men and 38.1% of women meeting criteria for obesity in 2016 (National Center for Health Statistics, 2018). Currently, bariatric surgery is the most successful treatment for morbid obesity (Adams, 2007; Cardoso, 2017; Sjostrom, 2007). While there is promising research indicating the benefits of bariatric surgery, concerns surrounding post-operative psychiatric destabilization and alcohol misuse have emerged. Multiple studies have revealed a link between Roux-en-Y gastric bypass surgery (RYGB) and alcohol use disorders post-surgery (Cuellar-Barboza, 2015; King, 2012; Steffen, 2015; Suzuki, 2012). While research has initiated the process of identifying outcome risks associated with bariatric surgery, less is known regarding when or why psychiatric hospitalizations occur postoperatively. Therefore, the goal of the current study was to examine the incidence of, and contributing factors to, psychiatric hospitalization post-surgery. The sample consisted of patients (N = 93) from a Midwest hospital who received RYGB surgery and had been readmitted post-surgery at least once.

Participants (83.7% female) in this study were, on average, 45.0 (SD = 9.86) years of age at first readmission. The majority of the sample (53%) had one readmission post-bariatric surgery; 24% had two readmissions, 7% had three readmissions, 4% had four readmissions, and 10% of patients had five or more readmissions. Across 267 post-surgery re-admissions, 42.4% of all re-admissions were due to alcohol-related problems, including 39.6% of readmissions with acute alcohol intoxication. Patients being readmitted for the first time after bariatric surgery, who were presenting with alcohol related problems, were readmitted after a mean of 1942 days (approximately 5.3 years; SD = 1217 days). Patients being readmitted for psychiatric concerns (41.3% of readmissions) were readmitted an average of 1278 days (3.5 years; SD = 1056 days) post-surgery. Results indicate that a significant percentage of patients readmitted after RYGB surgery are experiencing alcohol-related problems, indicating a unique relationship between RYGB and postoperative alcohol problems. Psychologists on bariatric surgery teams should prioritize ongoing assessments of alcohol misuse in RYGB patients (for years after surgery) and provide psycho-education around alcohol use long-term.

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Paper Session 36

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CONSISTENCY OF SELF-WEIGHING, RATHER THAN FREQUENCY, MAY BE KEY FOR PROMOTING WEIGHT LOSS MAINTENANCE

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Background: Greater adherence to self-monitoring of weight, typically defined as total frequency of self-weighing over a specific time period, has been shown to promote greater success at both weight loss and longer-term weight loss maintenance. For dietary self-monitoring, however, research has shown that greater *consistency* of self-monitoring (the number of weeks that a participant monitored intake ≥ 3 days) may be more important than total frequency for promoting weight loss maintenance. Less is known regarding the relative importance of consistency in self-weighing, and a threshold for defining consistency of self-weighing has not been established. Thus, the current study aimed to 1) develop this threshold and 2) investigate the contributions of frequency and consistency of self-weighing to weight loss maintenance during a 9-month period following a 12-week weight-loss program.

Methods: Participants were 74 adults with overweight/obesity, (mean \pm SD) age = 50.7 \pm 10.4 years, BMI = 31.2 \pm 4.5 kg/m², 84% White, 69% Female. Weight was assessed at in-person assessments at Month 3 (post-intervention) and Month 12 (end of the maintenance period). *Frequency* of self-weighing was defined as the number of days that participants self-weighed during the maintenance period via a study-provided smart scale. A threshold for *consistency* was defined as the minimum number of days per week of self-weighing that was significantly associated with weight change, with 7 potential options ranging from ≥ 1 to all 7 days each week. Next, three hierarchical regressions were used to assess associations between frequency, three levels of consistency (the minimum and maximum clinical recommendations of ≥ 1 day and all 7 days, along with the identified threshold) and weight change during the maintenance period.

Results: Significant associations were observed between consistency of self-weighing and percent weight loss when consistency was defined as self-weighing ≥ 6 or all 7 days/week, $r_s = -.27$ and $-.32$, $p_s = .019$ and $.005$, respectively. These associations remained significant after controlling for frequency, $p_s = .025$ and $.013$, respectively; however, there was not a significant association observed between frequency and weight change, and no interaction was observed between frequency and consistency, $p_s > .05$.

Conclusion: Results demonstrate that consistency of self-weighing may be more important than total frequency for preventing weight regain after the end of a weight-loss program. Further, results suggest that a high level of consistency (self-weighing ≥ 6 days/week) may be necessary to promote successful weight loss maintenance. Taken together with previous findings, our results support the emerging clinical recommendation of daily self-weighing to promote weight loss maintenance.

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Paper Session 37

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CHANGES IN SMOKING PREVALENCE AND PERCEPTION OF SMOKING ON CAMPUS BEFORE AND AFTER A SMOKE-FREE UNIVERSITY CAMPUS POLICY

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Background: Smoke-free policies can decrease the prevalence of smoking and denormalize smoking behaviors; however, there is limited research into whether policies that prohibit all smoking on college campuses significantly impacts smoking behavior – and the perception of the prevalence of peer smoking – among college students.

Methods: This study compares college campus smoking prevalence and perceptions of smoking prevalence before and after a complete smoking ban was enacted in the fall of 2015. Logistic regression models evaluated the trends in prevalence across repeated cross-sectional survey waves administered in a large, ethnically diverse public university in 2011 (n=1,548), 2013 (n=3,657), 2015 (n=3,456), 2016 (n=2,575), and 2018 (n=4,600). A spline term was included in regression models to evaluate whether the trend in prevalence or perceptions differed after (vs. before) the smoking ban was implemented.

Results: In 2011, 21.1% of students reported smoking any tobacco product, 13.2% reported cigarette use, and students thought that 41.4% of the students on campus smoked cigarettes in the past 30 days. On average, the prevalence of nicotine product use decreased over the study period. Prior to the ban, the prevalence of smoking any tobacco product decreased on average 27.9% (AOR=0.89, 95%CI: 0.85, 0.97) every year; after the ban, a significantly greater decline was observed, where smoking prevalence decreased by 37.8% (AOR=0.787, 95%CI: (0.78,0.98). Similar patterns were observed for specific tobacco products (i.e., cigarette use). The perceptions of prevalence of student smoking on campus decreased by about 4.3% per year prior to the ban ($\beta=-2.29$; 95%CI:-2.89,-1.69), and by about 6.5% every year after the ban ($\beta=-6.11$, 95%CI:-8.26,-3.96). For both prevalence of use and perceptions of use on campus, the greatest changes after implementation of the ban were observed among 18-21 year old students (p-interaction < 0.05). Stratified analysis identified that the pre/post decline in past 30-day nicotine product and perceived prevalence was largest in the youngest age category (18-21 years old).

Discussion: These results suggest campus-based anti-smoking policies are an effective tool. Over time, campus-based smoking bans may contribute to a reduction in use of all nicotine delivery systems and may strengthen anti-smoking normative beliefs particularly among younger cohorts who enroll after a ban has established a smoke-free campus.

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Paper Session 37

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LONGITUDINAL STUDY OF DUAL USE OF COMBUSTIBLE CIGARETTES AND THE NICOTINE SALT POD SYSTEM (NSPS) IN ADULT CURRENT SMOKERS

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Objective: Use of the nicotine salt pod system (NSPS) has increased among adults; however there is limited data on NSPS use patterns and dual use with combustible cigarettes (CC) over time. This study examined changes in dual use and switching to NSPS-only over a 6-month period among new NSPS users who were current smokers.

Methods: Longitudinal survey data of U.S. adults (age 21 or older) who recently purchased a NSPS (JUUL Labs, Inc.) starter kit was analyzed as part of an IRB approved behavioral study. Current smokers were defined as having smoked > 100 lifetime cigarettes and reported smoking some days/every day at baseline. To specifically characterize dual use of NSPS and cigarettes, participants that reported use of other brand vapor products were excluded from analysis. Follow-up assessments of past 30-day NSPS use and CC were completed (n = 9903). Dual use was defined as reporting any use of NSPS and CC in the past 30 days. NSPS-only was defined as no concomitant CC use at all. To further understand dual use and dropouts, an intention-to-treat (ITT) sample was created by treating all dropouts as having returned to CC-only use. Dual and NSPS-only use rates were summarized for the ITT sample (n=9955) and compared to the efficacy sample (n=9903).

Results: Most current smokers were white (73.8%) males (53.9%) with mean age of 32.7 (SD = 11) years. At each follow-up, dual use rates decreased, from 67.3% at 1-month, 57.4% at 2-months, 52.5% at 3-months to 45.4% at 6-months. Dual use rates declined an average of 3.7% each month, whereas NSPS-only use rates increased an average of 2.9% each month. NSPS-only use rates increased from 31.2% at 1-month, 39.6% at 2-months, 43.4% at 3-months to 48.8% at 6-months. As late as 6-months, NSPS-only became more common than dual use. The increase of NSPS-only use rates was largely derived from the decrease of dual use rates. In the ITT sample, dual and NSPS-only use rates at each follow-up had less than 1% difference compared to the efficacy sample.

Conclusions: Although a sizeable number of current smokers fully switched from CC after 1 month of NSPS use (31.2%), rates of dual use of NSPS and CC continued to decline sharply over 6-months of follow-up. This suggests that many dual users may be in a transition period before completely switching from CC to NSPS. Longer follow-up research is needed to assess this pattern over time.

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Paper Session 37

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CORRELATES OF CIGARETTE-ONLY AND E-CIGARETTE TOBACCO USE AMONG LOW-INCOME, URBAN VULNERABLE POPULATIONS

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Smoking prevalence among low-income or unstably housed individuals remains disproportionately high. Unstably housed smokers may use alternate tobacco products as an aid to reduce or quit conventional cigarette smoking due to financial restraint in respond to increased cigarette tax and smoke-free policy. Concurrent use of multiple tobacco products is associated with negative health consequences. Self-regulation theory describes thoughts and emotions that drive health-protective behavior to manage future illness threat. Of particular interest is having more understanding of tobacco use and cancer beliefs among racial/ethnic minority, low-income, and unstably housed groups. The aims of this analysis were to describe conventional cigarette and/or e-cigarette use, particularly in racial/ethnic and unstably housed groups in the City of San Francisco using data from an adaption of the San Francisco Health Information National Trends Survey (N=1,027). Survey oversampled disadvantaged populations and was administered in English (50%), Chinese (25%) and Spanish (25%).

Overall, 26% reported tobacco use in the past 30 days (18% cigarettes, 2% e-cigarettes, 6% dual use). Compared to White participants, Asian and Latinx respondents were less likely to use any tobacco product (OR 0.24, 95% CI: 0.11, 0.52 and OR 0.41, 95% CI: 0.20, 0.84, respectively). Limited English proficient respondents were less likely to use (OR 0.31, 95% CI: 0.19, 0.51). Related to socioeconomic position (SEP) related factors, housing instability was positively associated with use (OR 2.42, 95% CI: 1.72, 3.40) and those earning \$35,000-\$50,000 yearly, compared to higher income group, were less likely to use (OR 0.48, 95% CI: 0.24, 0.95). Respondents who believed there was little to prevent cancer were more likely to use (OR 1.60, 95% CI: 1.03, 2.51). Those who reported lower risk perception were less likely to use (OR 0.56, 95% CI: 0.36, 0.88). In racially and SEP diverse urban regions, with high levels of tobacco use and poor health outcomes, development of informed health communication and interventions designed to increase awareness of the links between tobacco use and cancer risk may help to dispute incorrect illness beliefs, and promote tobacco cessation.

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Paper Session 37

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EFFECTS OF AN ONLINE RESPONSIBLE VENDOR TRAINING FOR RECREATIONAL MARIJUANA STORES ON SALES TO PSEUDO-UNDERAGE CUSTOMERS

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Recreational marijuana sales in the United States debuted in Colorado and Washington State in 2014. Initial regulations were designed in part to ensure that marijuana products were sold only to adults over age 21 who provided a state-approved identification (ID). Training store personnel in responsible sales practices, an intervention that has reduced alcohol sales to under-age youth, was evaluated in the recreational marijuana markets in these two states in 2016-18. An online responsible marijuana vendor (RMV) training was developed with input from state regulators and recreational marijuana store personnel. The five modules contained interactive learning elements that covered state laws, ID checking, health effects of marijuana, driving under the influence, refusal of sales to intoxicated customers, and store processes such as product tracking and labeling. A sample of n=175 recreational cannabis stores in Colorado and Washington State were selected for a randomized controlled trial, with sales to pseudo-underage patrons measured at baseline and two follow-ups post-randomization (2 visits per store at each measurement round). After baseline, 75 stores were assigned to a usual and customary training (control) condition; the remaining 100 stores were invited to use the RMV training (40% of stores used it). At baseline, sales of marijuana to pseudo-underage buyers were refused at 93% of 349 visits to the stores across the 2 states. Adjusting for store characteristics, there was no difference in change in refusal rates between treatment groups from baseline (intervention: 94%, control: 95%) to 3-month posttest (intervention: 96%, control: 98%) or 9-month posttest (intervention: 98%, control: 98%, treatment x assessment round: p=0.672). In the intervention group, training uptake was not related to refusal rate (training x assessment round: p=0.382). Nearly all recreational marijuana stores refused sales to young customers who did not present a state-approved ID. Training in responsible sales practices alone did not appear to affect refusals. State regulations and industry concerns over federal priority for preventing diversion to youth appeared to create very high deterrence of sales to underage-appearing customers from the outset of the markets. This ceiling effect in the refusal measure may have made it difficult to achieve a training effect. The RMV training may have simply reinforced this high compliance with regulations on ID checking and underage sales.

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CITATION AWARD WINNER

Paper Session 37

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UNDERSTANDING THE RELATION BETWEEN TOBACCO OUTLET DENSITY AND TOBACCO USE IN AFRICAN AMERICAN YOUNG ADULTS

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Researchers have assessed the relation between tobacco outlet density (TOD) and various sociodemographic factors such as urban/rural neighborhood status, and the percentage of people living in poverty or the percentage of African Americans and Hispanics living in a census tract. The results of these studies have revealed striking TOD disparities, with the greatest density in areas where ethnic minorities and the poor live. Researchers have found relations between TOD and smoking behavior, including the inception, progression, and cessation of use, although the results are mixed, with some researchers finding no relations at all. This suggests that the TOD-tobacco use relation is not homogeneous, and that more research is critically needed to better understand how TOD affects use, particularly in ethnic minorities who have the greatest exposure to tobacco outlets. We therefore proposed to assess the relation between TOD and tobacco use (combustible cigarettes and chew tobacco) behavior in a sample of 694 African American young adults (18-22 years old) taking part in the Panel Study of Income Dynamics (PSID) Transition to Adulthood (TA) 2015 supplement. Using binary logistic regression analysis and controlling for urban/rural status, education, participation in risky behaviors (e.g., fighting, drinking and driving), and biological sex, we assessed all main effects, and two and three-way interactions involving TOD and urban/rural status. There were two significant two-way interactions. There was a positive relation between TOD and use of a tobacco product for males but a negative TOD/tobacco use relation for females ($p=0.031$). There was also a significant education by TOD interaction ($p=0.036$) with TOD positively related to tobacco use for participants with a high school education or less but a negative TOD/tobacco use relation for participants with greater than a high school education. There was also a significant TOD by urban/rural neighborhood by risky behavior three-way interaction ($p=0.037$). For participants living in a rural neighborhood, the relation between TOD and tobacco use was positive for those engaging in risky behavior but negative for those not engaging in risky behavior. In urban settings, the relation was almost reverse, with those engaging in risky behavior having a negative relation between TOD and tobacco use. These findings suggest the relation between TOD and tobacco use is not straight forward. Researchers should assess how TOD impacts use in different populations of young adults, particularly ethnic minorities, using methods that permit for greater assessment of heterogeneity of effects.

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Paper Session 38

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RURAL RESIDENTS' PERSPECTIVES ON A MHEALTH/PERSONALIZED HEALTH COACHING INTERVENTION

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Rural Appalachian residents experience elevated prevalence of cardiovascular disease, cancer, diabetes, and obesity, leading to some of the highest rates of premature mortality in the US. Sparse personal (e.g., low socioeconomic status) and community resources (e.g., health care professional shortages, food deserts, inadequate recreational facilities) contribute to and compound these disparities. However, new opportunities, including increasing personal technology use and connectivity, may help overcome health disparities and resource scarcity. We convened four focus groups (N=38) and sixteen key informant interviews to assess perspectives on an evidence-based diet and physical activity intervention, Make Better Choices 2 (MBC2). A multicomponent lifestyle intervention, MBC2 consists of personalized coaching, personal technology (app), accelerometer, and financial incentives. Focus group and key informant participants were recruited through snowball and purposive sampling. Two experienced focus group conveners and two trained local interviewers collected the data. All sessions were, with participants' permission, tape recorded and later transcribed. Three researchers content analyzed the transcripts. Consistent with qualitative research standards, rigor was enhanced through member checks with a Community Advisory Board and peer debriefing. Findings indicate extensive enthusiasm for the mHealth/personalized coaching approach, with minimal need for program modification. Specifically; 1) Appalachian residents overwhelmingly believe in the viability and support the use of personal technology to deliver health interventions, particularly with personalized health coaching; 2) though abating, intertwined circumstances persist that must be addressed to improve the likelihood of the success of mHealth lifestyle interventions in Appalachian communities; 3) successful technology-oriented interventions would benefit from leveraging personal connections, using local coaches, and enhancing participants' educational opportunities. Other recommendations included expanding the upper age inclusion; using social media for recruitment and retention; providing community resource guides to direct participants to local healthy food and activity opportunities; and hosting quarterly events to highlight success stories. We conclude that blending personal coaching and new technologies not only is feasible, but may be essential to reach vulnerable rural residents.

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Paper Session 38

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DEVELOPMENT AND FEASIBILITY OF PAM: A VERY BRIEF FACE-TO-FACE INTERVENTION FOLLOWED BY A TEXT MESSAGE AND/OR SMARTPHONE APP

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Objectives: This paper describes the development and feasibility of a very brief face-to-face intervention (VBI) followed by a text message and/or smartphone app to support treatment adherence to patients with hypertension in primary care.

Primary and secondary outcome: The primary outcome of the intervention development was the development and operationalisation of the three-component intervention: the VBI, the text message, and the smartphone app. The primary outcome of the intervention feasibility was to assess intervention uptake and retention rates, explore process of behavioural change, and obtain outcome values (means and CI) to inform an effectiveness and cost effectiveness trial. Medication adherence was assessed using urine analysis, refill prescription data and self-reports. Clinical outcomes were assessed using systolic blood pressure, HbA1c and full lipid profile.

Participants and Methods: Intervention development was informed by (a) a pilot one-month study with 23 patients, (b) in-depth interviews with patients and practice nurses, (c) PPI/E input, (d) stakeholders' consultations, and (e) systematic reviews of empirical evidence. Intervention feasibility is assessed in an RCT with 100 patients (n=60 intervention group and n=40 control group).

Results: Intervention piloting suggested high intervention engagement with, and fidelity of, the text message and app intervention; which included a combination of behaviour change techniques and strategies highly tailored to patients' beliefs and prescription plan. The intervention has a good uptake (5.6% response to invitation) and attrition (5% drop out) rate at three months follow up. Patients and nurses end-of-intervention interviews informed the process by which intervention impacted on medication adherence and made recommendations to optimise intervention uptake, attrition and implementation.

Conclusion: PAM is a feasible adjunct to primary care. A larger RCT of 764 patients (382 per group) from 50 primary care practices is recruited to provide robust evidence about its effectiveness and cost-effectiveness.

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Paper Session 38

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PATIENT CHARACTERISTICS ASSOCIATED WITH MOBILE APPLICATION ENGAGEMENT FOR ASTHMA AND COPD SELF-MANAGEMENT

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Introduction: Digital health interventions that include a mobile application ("app") have been shown to benefit patients with respiratory disease, likely due to improved self-management (e.g. greater daily medication adherence). However, engagement with apps may vary by patient, resulting in differential exposure to the intervention. The objective of this study was to identify characteristics associated with higher app engagement in patients with asthma or COPD.

Methods: Adult patients (≥ 18 years of age) with self-reported asthma or COPD and enrolled in a digital health platform (Propeller Health, Madison, WI), consisting of electronic medication monitors (EMMs) and a companion mobile application ("app"), were considered. EMMs captured the date, time and location of each inhaler actuation that was then delivered to the app via Bluetooth to give patients insights on their inhaler use. Patients reported data on their education and income via electronic surveys. Multivariable, linear regressions were used to identify patient characteristics associated with engagement metrics, including mean daily app opens and mean daily app session duration (seconds), for asthma and COPD separately. The engagement metrics were right-skewed, therefore were log-transformed prior to modeling. Patient-level characteristics included age, gender, household income (< vs. ≥ \$50,000 annually), education level (≤ vs. > high school), and the number of days on the platform. The threshold for statistical significance was 0.05.

Results: The patient population (n = 617) with asthma (n = 433) and COPD (n = 184) were on average 38 and 60 years of age and 17% and 40% male, respectively. Mean daily app opens were 0.34 and 0.57, and session duration was 13.3 and 23.4 seconds, for asthma and COPD, respectively. Multivariable linear regressions found that older age was associated with more frequent app opens and longer session duration in both asthma and COPD (all $P < 0.01$). Male gender was positively associated with app opens ($P < 0.001$) and session duration ($P < 0.01$) in COPD, but not asthma. Lower annual income was associated with shorter session duration in asthma only ($P = 0.04$).

Conclusion: Results suggest that socio-demographic characteristics, such as age, gender and income, are associated with engagement with an asthma and COPD mobile app. These characteristics can be used for targeting interventions to increase app engagement, thereby improving awareness and self-management of disease.

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Paper Session 38

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USER ENGAGEMENT AND ADAPTATION OF A SMARTPHONE-BASED APPLICATION FOR LATINA WOMEN WITH BREAST CANCER

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Background: Latina women often experience disparities in breast cancer survivorship, including poorer health-related quality of life (HRQOL) and greater psychosocial needs compared to their white counterparts. Our team developed the *My Guide* application to improve HRQOL and the *My Health* active-control application to promote overall health among Latina breast cancer survivors (BCS). This presentation describes user engagement of these smartphone applications.

Methods: Latina BCS (N=78) were randomized to use *My Guide* or *My Health* for six weeks, after which they completed exit surveys to report levels of satisfaction with their assigned application. Individual application usage was tracked and quantified using click-level data.

Results: On average, participants used the applications for 478.15 minutes (7.97 hours) across six weeks (M=79.69 minutes/week, SD=64.31, range 0-269). Overall usage did not differ between conditions ($p > .05$). In total, 97% and 92% of participants were satisfied with the *My Guide* and *My Health* application, respectively, and 92% of *My Guide* and 84% of *My Health* participants wanted to continue using the applications. *My Guide* and *My Health* had a total of 6,516 and 7,923 clicks within the applications, respectively. Within *My Guide*, most clicks were on topics related to psychosocial aspects of the cancer experience (27%) followed by physical symptoms (15%) and general breast cancer knowledge (13%). Within *My Health*, the majority of clicks were on topics related to nutrition (43%) and exercise (19%). In semi-structured exit interviews, many *My Guide* participants expressed a desire for additional content regarding general health and lifestyle behaviors, whereas many *My Health* participants desired more content specific to breast cancer and coping strategies. In addition, participants reported wishing they had access to the applications during cancer treatment as opposed to following treatment.

Conclusions: As *My Guide* and *My Health* had similar application usage, were acceptable to participants, and collectively included relevant breast cancer survivorship concerns, we adapted and merged the applications to develop a new application for Latina women in active treatment for breast cancer, *My Guide for Breast Cancer Treatment*. User engagement findings from these trials have implications for the cancer-related needs of Latina breast cancer patients.

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Paper Session 38

4:30 PM-4:45 PM

GAMIFICATION OF A DAILY, NEUROCOGNITIVE TRAINING PROGRAM ENHANCES WEIGHT LOSS FOR MEN BUT NOT FOR WOMEN

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Inhibitory control (IC) is a basic brain capacity to inhibit prepotent responses in order to adaptively restrain intrinsic drives. IC exerts a strong influence on hedonically-driven behavior such as the consumption of high-calorie food. As such, the ability to improve IC holds promise as a means of enhancing the impact of conventional weight loss programs. Computerized inhibitory control trainings (ICT), which involve repeated practice at inhibiting response to a relevant stimulus, have shown mixed results in impacting real-world behavioral change. One determinant of success appears to be whether participants are willing to repeat trainings frequently over an extended duration. Gamification represents a method of increasing engagement with ICT. We previously reported that gamification, surprisingly, reduced the effects of ICT on weight loss. In this follow-on study, we explored the moderating effect of gender on gamification.

Overweight participants who were habitual sweets consumers (N=76) were put on a non-sweets diet for 8 weeks, and were asked to complete 42 daily and 2 weekly home computer-based 10-minute ICTs personalized to each person's most-frequently-consumed sweets. Participants were randomized to receive either a non-gamified ICT or a gamified ICT (involving quickly moving down supermarket aisles, grabbing food to place in a shopping cart, and featuring animation, sound, points, levels and badges). In line with hypotheses, gamification improved engagement with daily ICT in men only: For example, gamification increased compliance 9.1% in men, but decreased compliance by 3.2% in women ($F=1.60$, $p=.20$), although overall compliance with daily trainings was higher for women compared to men (89.8% vs. 81.1%, $t(74)=2.24$, $p=.03$). Most notably, the gamification effect was significantly moderated by gender; specifically, gamification enhanced 8-week weight loss for men (4.2% vs 2.5%), but attenuated weight loss for women (1.7% vs 3.1%; $F=.547$, $p=.02$).

Overall results suggest that gender profoundly moderates the effects of gamification on daily, neurocognitive training paradigms designed to impact health behavior. Most notably, gamification enhanced the effects of ICT on weight loss for men, perhaps because of intrinsic enjoyment of gamification; yet, gamification attenuated the effects for women, perhaps because gamification elements were distracting. Further work is needed to understand the underlying reasons for, and scope of, gender's moderating effect. Further work is also needed to identify gamification strategies that enhance effects for women.

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Paper Session 39

3:30 PM-3:45 PM

MEDIATORS OF ACCEPTANCE AND COMMITMENT THERAPY FOR FEAR OF CANCER RECURRENCE

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Growing research supports the efficacy of Acceptance and Commitment Therapy (ACT) for improving psychological well-being in cancer survivors, but less is known regarding mechanisms underlying ACT's effects. According to the ACT model, the central mechanism of ACT is increased psychological flexibility, which refers to being fully engaged in the present moment (mindfulness/acceptance) while acting consistently with one's values (commitment/action). In this study, we conducted secondary analyses examining psychological flexibility and mindfulness facets as potential mediators of ACT's effect on fear of cancer recurrence and other psychological outcomes.

Female breast cancer survivors ($N = 91$, stages 0-III) with clinically-elevated fear of cancer recurrence were recruited from academic oncology clinics in the mid-western United States. Most participants were Caucasian (84%) with an average age of 59 years ($SD = 11$). Participants were randomly assigned to ACT ($n = 33$), survivorship education ($n = 32$), or enhanced usual care ($n = 26$). ACT and survivorship education participants completed six weekly 2-hour group sessions, while enhanced usual care participants received written materials on managing life after cancer treatment in one brief meeting. Participants completed self-report measures at baseline, post-intervention, and one and six months post-intervention. Prior analyses indicated that ACT significantly improved fear of cancer recurrence, depressive symptoms, and anxiety.

Latent growth mediation models showed that change in psychological flexibility mediated ACT's effect on change in fear of cancer recurrence ($B = -0.42$, 95% CI $[-3.14, -0.04]$), depressive symptoms ($B = -3.95$, 95% CI $[-7.18, -0.04]$), and anxiety ($B = -6.73$, 95% CI $[-8.85, -0.02]$). However, change in mindfulness facets (nonjudging and nonreactivity) did not predict change in study outcomes.

Consistent with the ACT model, these preliminary findings suggest that change in psychological flexibility may underlie the effects of ACT on psychological outcomes. Conversely, change in mindfulness facets did not mediate ACT's effects. Only ACT participants received mindfulness training, and, thus, null findings may be related to an inaccurate understanding of mindfulness. Next steps include determining which specific aspects of psychological flexibility (e.g., mindfulness/acceptance vs. commitment/action) help explain the impact of ACT on psychological outcomes in large, diverse samples of cancer survivors.

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Paper Session 39

3:45 PM-4:00 PM

GROUP VERSUS INDIVIDUAL ACUPUNCTURE (AP) FOR CANCER PAIN: A RANDOMIZED NON-INFERIORITY TRIAL

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Background: A service delivery model using group acupuncture (AP) may be more cost-effective than individual AP in general, but there is little evidence to assess whether group AP is a comparable treatment in terms of efficacy to standard individual AP. The study aimed to compare group vs. individual delivery of 6-week AP among cancer patients with pain.

Methods: The study design was a randomized non-inferiority trial of the individual (gold-standard treatment) vs. group AP for cancer pain. The primary outcome was pain interference and severity, measured through the Brief Pain Inventory (BPI). Secondary outcomes included measures of mood, sleep, fatigue, and social support. Changes in outcomes from pre to post-intervention were examined using linear mixed effects modeling and non-inferiority was inferred using a non-inferiority margin, a difference of change between the two arms and 95% CIs. Pain interference was tested with a non-inferiority margin of 1 on the BPI, while pain severity and secondary outcomes were compared using conventional statistical methods.

Results: The trial included 74 participants randomly allocated to group (35) or individual (39) AP. The non-inferiority hypothesis was supported for pain interference [$\Theta -1$, $\Delta 1.03$, 95%CI: .15-2.20] and severity [$\Theta -.81$, $\Delta .52$, 95%CI: .33-1.38] as well as for mood [$\Theta -7.52$, $\Delta 9.86$, 95%CI: .85-18.86], sleep [$\Theta -1.65$, $\Delta 2.60$, 95%CI: .33-4.88], fatigue [$\Theta 8.54$, $\Delta -15.57$, 95%CI: 25.60-5.54] and social support [$\Theta .26$, $\Delta -.15$, 95%CI: -.42-.13], meaning that group AP was not inferior to individual AP treatment. Both arms evidenced statistically significant improvements across all symptoms pre-post intervention. Effect sizes for group vs. individual AP on outcomes of pain, sleep, mood and social support ranged from small to very large, and were consistently larger in the group condition. The total average cost-per-person for group AP (\$221.25) was almost half that of individual AP (\$420).

Conclusions: This is the first study to examine the non-inferiority of group AP with the gold standard individual AP. Group AP was non inferior to individual AP for treating cancer pain, and was superior on many health outcomes. Group AP is more cost-effective for alleviating cancer pain and should be considered for implementation trials.

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Paper Session 39

4:00 PM-4:15 PM

THE SEAMLESS STUDY: A RANDOMIZED CONTROLLED TRIAL OF A SMARTPHONE APP-BASED MINDFULNESS INTERVENTION FOR CANCER SURVIVORS

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Background: Cancer patients transitioning to survivorship after completing cancer treatments need psychosocial interventions to manage stressors such as anxiety, depression, and fear of cancer recurrence. Mindfulness-based interventions (MBIs) are effective for treating these symptoms; however, cancer survivors are often unable to participate in face-to-face interventions because of difficulties such as work and family commitments, treatment-related side-effects, scheduling conflicts and geography. Smartphone app-based MBIs are an innovative way to deliver psychosocial cancer-care, and can overcome several such difficulties. However, while hundreds of mindfulness training apps are commercially available, none have been developed specifically for and rigorously evaluated in cancer survivors.

Objective: The SEAMLESS study aims to evaluate the efficacy of a tailored app-based mindfulness intervention for cancer survivors on: 1) symptoms of stress (primary outcome), as well as; 2) fear of cancer recurrence, anxiety, depression, fatigue, and overall physical functioning (secondary outcomes). Additionally, the study aims to assess associations between psycho-biometric data collected by the smartphone app with self-reported outcome data from validated psychometric scales.

Methods: The study is a randomized wait-list controlled trial evaluating the effectiveness of the *Am MBCS app* for impacting the primary and secondary outcomes in cancer survivors who have completed all treatments for a minimum of 2 weeks. Outcomes were assessed online using validated psychometric instruments delivered through the Research Electronic Data Capture (REDCap) survey software at: 1) baseline; 2) mid-intervention (2 weeks later); 3) immediately post-intervention (4 weeks); 4, 5 & 6) at 3, 6 and 12 months' post-baseline. The waitlist group crossed over to the intervention condition after the 3-month assessment. Additionally, data will be obtained by the smartphone app itself, which includes users' engagement with the app-based intervention, their emotional state (e.g. angry, elated) from a user-inputted digital emotion-mapping board, and heart-rate data through algorithms that analyze facial bio-signals using photoplethysmography technology.

Results: 83 participants enrolled with primarily breast (44/83, 53%) or colorectal (17/83, 20%) cancers, although many other cancer types are also represented. Data collection for analysis of the primary outcome will be complete by September 2019, and follow-up data will be complete by May 2020. Data will be analyzed to determine group differences using and Linear Mixed Modelling statistical techniques.

Discussion: This study will provide rigorously evaluated efficacy data for an app-based mindfulness intervention for cancer survivors, which if helpful could be made available for psychosocial care at cancer centers worldwide.

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Paper Session 39

4:15 PM-4:30 PM

SOCIAL MEDIA RECRUITMENT OF YOUNG ADULT CANCER SURVIVORS INTO A RANDOMIZED TRIAL OF AN MHEALTH PHYSICAL ACTIVITY INTERVENTION

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Background: While increasing physical activity is beneficial for cancer survivors, about 60% of young adult cancer survivors (YACS, ages 18-39) are not meeting physical activity guidelines. To date, few studies have recruited YACS from around the United States to promote physical activity using digital and distance-based intervention approaches. This study describes the recruitment strategies used in the Improving Physical Activity after Cancer Treatment (IMPACT) study, a 12-month randomized controlled trial of a theory-based, mobile physical activity intervention designed specifically for YACS.

Methods: We used a variety of methods and channels to recruit YACS who were diagnosed with cancer between the ages of 18-39 and within the last 10 years, had completed active therapy, could read, write and speak English, participated in less than 150 minutes/week of moderate-to-vigorous intensity activity, and had Internet access, a mobile phone, and a text messaging plan. We used phone calls and direct mailings to potentially eligible individuals identified through tumor registries, targeted social media advertisements, list serves, and clinical referrals. We also asked community organizations to share study information on social media and advertised at a national conference for YACS.

Results: The current sample of 273 participants (21% minority, 18% male, mean age 33.4±4.8 years, 98% of planned sample) was recruited over a 13-month period at a rate of 21 participants/month. Of 860 online screening surveys initiated, 693 were completed (80.6%). Of 492 individuals who were initially eligible, 392 completed additional phone screening, and 370 were eligible. Among eligible individuals, 328 (88.6%) consented to participate and 273 (73.8%) have been randomized. The top recruitment approach was social media, with 46.5% (322 of 693) of completed screeners initiated through Facebook, of which 94.7% (305 of 322) were recruited through posts by cancer organizations, friends or family, while just 5.3% (17 of 322) were through paid advertisements. Almost half of randomized participants (131 of 273, 48.0%) were recruited via Facebook posts (45.8% posts by organizations/friends, 2.2% from paid advertisements), while direct mail yielded 40% of participants. Other forms of social media (Instagram and Twitter), email, list serves, clinic referrals, and conference advertisements each yielded 3% or fewer participants.

Conclusion: Facebook was the most successful strategy to recruit YACS to the IMPACT trial. These findings could provide useful guidance for recruiting sedentary YACS and for distance-based mobile physical activity intervention trials.

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MERITORIOUS AWARD WINNER**Paper Session 39****4:30 PM-4:45 PM****DEVELOPMENT AND PRELIMINARY FEASIBILITY STUDY OF A COMMUNITY-BASED WELLNESS COACHING FOR CANCER SURVIVORS PROGRAM**

Nicole J. Berzins, n/a¹, Michael J. Mackenzie, PhD², Nicole T. Pickles, BA Psychology Emory University³, Tara Leonard, MS Health Promotion, National Board Certified Health and Wellness Coach², Diane O. Beneck, BSN, National Board Certified Health & Wellness Coach², Mary Lou Galantino, PT, MS, PhD, MSCE, FNAP, FAPTA⁴

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In the United States alone, there are more than 15 million cancer survivors, with that number estimated to reach 20 million by 2026. Cancer survivors tend to have poorer health outcomes and are at increased risk for developing a second cancer and other chronic illnesses. Evidence suggests a substantial cancer burden may be prevented through lifestyle modification. The purpose of this preliminary feasibility study was to determine the viability of health coaching for the improvement of health, fitness, and overall well-being of cancer survivors in a community setting. Participants were recruited from Cancer Support Community locations across the state of Delaware. Health coaching was provided to people diagnosed with cancer anywhere along the cancer continuum, from early diagnosis to long-term cancer survivorship. The program provided six individual coaching sessions to each participant: one 90-minute initial in-person session and five 30-minute follow-up sessions, either in-person, by phone, or videoconference, as designated by participant preference. A total of 48 participants completed an average of 85% of coaching sessions. Surveys were sent to participants pre- and post-intervention on a variety of health topics including fitness, eating habits, perceived stress, anxiety, depression, and quality of life. Results were analyzed using repeated measures multilevel modeling. Moderately significant reductions were found in perceived stress ($p < .001$, $d = -0.53$) and anxiety ($p < .001$, $d = -0.57$), with small but significant decreases in depression ($p = 0.10$, $d = -0.35$). Coaching participants also noted significant improvements in weekly physical activity, including weekly moderate-vigorous physical activity ($p = .007$, $d = 0.48$; $p = .034$, $d = 0.37$). Small significant increases were found in healthy eating behavior ($p = .009$, $d = 0.40$). Participants reported moderate change in the quality of their sleep and small but significant changes in the duration of their sleep and sleep efficiency ($p = .006$, $d = -0.46$; $p = 0.05$, $d = -0.35$; $p = 0.035$, $d = -0.27$). Importantly, participants reported improved quality of life particularly in areas of physical and emotional well-being ($p < .001$, $d = 0.46$; $p < .002$, $d = 0.56$). Smaller increases were found in functional and total well-being ($p = 0.011$, $d = 0.36$; $p = 0.002$, $d = 0.39$). Preliminary findings indicate real behavior change in the measured outcomes and suggests that health coaching may be an important tool for cancer survivorship.

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CITATION AWARD WINNER**Paper Session 40****3:30 PM-3:45 PM****EFFECTS OF RELATIONSHIP AND COMMUNICATION FACTORS ON AMBULATORY BLOOD PRESSURE IN CAREGIVERS OF ADVANCED CANCER PATIENTS**

Amy K. Otto, PhD¹, Emily C. Soriano, M.A.², Wendy C. Birmingham, Doctoral³, Susan Vadaparampil, PhD¹, Richard E. Heyman, Ph.D.⁴, Lee Ellington, PhD⁵, Maija Reblin, PhD¹

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Background: Cancer impacts both patients and their family caregivers. Evidence suggests that caregiving stress, including the strain of taking on a new role, can elevate the risk of numerous medical conditions, including high blood pressure (BP). However, the caregiver's psychosocial experiences, including their interpersonal relationship with the patient, may buffer some of the negative physiological consequences of caregiving. The goal of this study was to examine the influence of psychosocial contextual variables on caregiver ambulatory BP.

Method: Participants were 81 spouse caregivers of patients with advanced GI or thoracic cancer. For an entire day at home with the patient, caregivers wore an ambulatory BP cuff, which measured momentary BP at random intervals ($M = 20$ minutes). Immediately after each BP reading, caregivers reported on physical circumstances (e.g., posture, activity) and psychosocial experiences since the last BP measurement, including affect, caregiver and patient self-disclosure, and role perceptions (i.e., degree to which the caregiver felt more like a spouse vs. caregiver). Multilevel modeling was used to examine concurrent and lagged effects of psychosocial variables on systolic and diastolic BP, controlling for momentary posture, activity, time, and negative affect.

Results: Feeling more like a caregiver (vs. spouse) was significantly associated with lower systolic BP at the same time point, controlling for posture, activity, time, and negative affect. Patient disclosure to the caregiver since the previous BP reading was significantly associated with higher diastolic BP at the same time point. No lagged effects were statistically significant.

Discussion: Our results indicate that caregivers' psychosocial experiences can have immediate physiological effects. Future research should examine possible cognitive and behavioral mechanisms of these effects. For example, feeling more like a caregiver may lower stress by allowing caregivers to focus more on the practical tasks of caregiving; conversely, feeling more like a spouse may increase stress by causing caregivers to focus more on their spouse's potential suffering. Patient disclosure may also serve to increase the caregiver's awareness of the patient's stress, thus increasing the caregiver's own stress and diastolic BP. Future work should also explore longer-term effects of caregiver role perceptions and patient disclosure on caregiver psychological and physical health.

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Paper Session 40

3:45 PM-4:00 PM

INVESTIGATING NONVERBAL SYNCHRONY AS A MARKER OF RELATIONSHIP QUALITY IN ONCOLOGY INTERACTIONS WITH WHITE AND BLACK PATIENTS

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Background: Communication in racially discordant (Black patient, non-Black physician) oncology interactions, which constitute about 80% of Black patients' interactions, is generally poorer than in racially concordant interactions, and likely contributes to treatment disparities. However, the nonverbal behaviors that contribute to this problem are largely unknown. We examined nonverbal synchrony, or the nonconscious coordination of movement, which can reflect relationship quality. We hypothesized that racially discordant interactions will have lower levels of nonverbal synchrony.

Methods: Data include video recordings of 68 Black patients and 163 White patients discussing treatment with their non-Black oncologists. Recordings were submitted to motion detection software to measure nonverbal synchrony. This software measures global synchrony (all correlated motion), peak synchrony (all positively correlated motion), who is leading the interaction (similar to who is leading in ballroom dancing), and how much synchrony occurs based on who is leading the interaction. Using multi-level models, we investigated whether nonverbal synchrony differed in racially concordant and racially discordant dyads.

Results: Findings showed greater levels of global synchrony ($p < .05$) and greater peak synchrony ($p < .05$) in racially discordant interactions compared to racially concordant interactions. Global synchrony was the same in racially concordant interactions regardless of who was leading, but greater global synchrony occurred in racially discordant interactions when the patient was leading ($p < .05$).

Conclusions: This is the first study to use a dynamic jointly determined measure of behavior to assess oncology interactions. Contrary to our hypothesis, nonverbal synchrony was greater in racially discordant interactions than in racially concordant interactions. It appears patients are driving more of the synchrony in racially discordant interactions. This may suggest that physicians in racially discordant interactions adapt to their patients to bridge racial differences. Findings could contribute to physician training to enhance coordination and outcomes in oncology interactions.

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Paper Session 40

4:00 PM-4:15 PM

IMPLICATIONS OF ENROLLING A RURAL, COMMUNITY PHARMACY AS A VACCINES FOR CHILDREN PROVIDER ON HPV VACCINATION UPTAKE

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Background: Human papillomavirus (HPV) currently infects almost 80 million people in the U.S. High-risk HPV strains are associated with 6 types of cancers in men and women. Despite a safe, effective vaccine against high risk strains, HPV immunization rates remain low, particularly in the southeast. Disparities are a significant concern for rural areas where limited access and low socioeconomic status are major barriers, prompting the suggestion of pharmacies as alternative vaccination sites. In Alabama (AL), 45% of the population lives in rural areas; 22 of the 67 counties lack a pediatrician. Clarke County has the lowest HPV vaccine initiation rate in AL (28.2%), lacks a pediatrician, and 68.9% of adolescents are Medicaid-eligible. This study sought to determine the feasibility of enrolling a community pharmacy in Clarke County as a Vaccines for Children (VFC) provider and assess its potential impact on HPV vaccination.

Methods: We worked with a community pharmacy in Clarke County to enroll as a VFC provider, train in the state immunization registry, and develop internal vaccination and documentation protocols. We designed educational/promotional materials, a social media campaign, and quantitative surveys for parents and the pharmacist to measure baseline knowledge and intervention reach. Program evaluation of intervention efficacy, feasibility, and scalability is ongoing.

Results: From July 24-September 4, 2019, the pharmacy administered 37 HPV vaccines (32 VFC). Among parents, 56.7% reported physician referral to the pharmacy for HPV vaccination. While 53.3% reported attending specifically for the HPV vaccine, 63.3% received at least one other vaccine while there; 36.7% of parents noted convenience and speed as reasons for vaccinating their child at the pharmacy.

Conclusions: Community pharmacies address a significant need as alternative HPV vaccination settings among rural, medically underserved populations and can be feasibly achieved through productive partnerships. Physician referrals to pharmacy indicate growing acceptance of expanding the medical neighborhood. Positive parental response indicates feasibility for pharmacies as alternative settings. Uptake of 37 HPV vaccinations in 6 weeks in a town with population < 1500 is impressive, indicating high demand for more VFC providers in these areas. These findings are promising for expansion of these efforts with the ultimate goal of increasing HPV vaccination and reducing HPV-associated cancers.

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Paper Session 40

4:15 PM-4:30 PM

EXPLORING PATIENT-PROVIDER COMMUNICATION AND EDUCATION ABOUT OPIOID USE FOR CANCER-RELATED PAIN AMONG CANCER SURVIVORS

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Background: Prescription opioids are a common and effective method to manage cancer-related pain. However, cancer patients often receive little information from providers about prescription opioids they take. Effective provider communication and education are critical aspects of pain management which may help mitigate fear surrounding opioids and deter nonmedical use in the cancer survivorship context. We aimed to understand health care provider, cancer survivor, and community level stakeholder perceptions of and experiences with patient-provider communication regarding prescription opioids.

Methods: Healthcare providers (n=25), stakeholders (n=6), and cancer survivors (n=25) participated in interviews that assessed patient-provider discussions about pain, perceptions of opioid use, education about pain management, and psychosocial aspects of pain and cancer survivorship. Interviews were audio-recorded, transcribed, and coded. Inductive applied thematic analysis was employed to identify emergent themes.

Results: Participants from all three groups felt that the stigma associated with opioids (i.e., patients fear of being labeled “drug-seeking”), fear of addiction to opioids, and lack of a relationship with providers contributed to patients’ reluctance to discuss and report pain or pain concerns, resulting in poorly managed pain. Several providers also indicated that psychological issues of anxiety/depression could be exacerbated by poor pain management. Conversely, providers and stakeholders indicated that patients often take opioids as a method of coping with anxiety/depression. We also identified that education provided to cancer patients about opioids is inconsistent across providers and that the many different specialties involved in patients’ care team often resulted in a lack of inter-provider communication.

Conclusions: Findings suggest that inter-provider communication could improve and that there is a need for patient-centered communication, which emphasizes fostering relationships with patients, focuses on addressing patient concerns, responding to psychosocial issues, and promotes shared decision-making. These are critical components of cancer care among survivors who may require opioids to manage pain. Multi-level interventions that target patients and providers such as oncologists, primary care providers, psychiatrists, and psychologists should be developed to ensure patients are better informed on prescription opioids and non-opioid options for pain and how to communicate effectively with providers, and to better prepare providers to discuss these issues with patients, as provider education is key to addressing some of the misconceptions surrounding opioid use among patients.

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Paper Session 40

4:30 PM-4:45 PM

ONCOLOGIST CONFIDENCE IN GENOMIC TESTING AND IMPLICATIONS FOR TEST USE TO GUIDE PATIENT CARE

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Background: The rapid evolution of tools for precision oncology has accelerated the inclusion of genomic-based treatment planning as standard care. Yet, there is limited data about the extent to which oncologists are confident that they have the knowledge and resources to use genomic test results to guide treatment. We characterized oncologists’ confidence in using somatic genomic testing to guide treatment decisions and examined predictors of confidence and recent genomic test use.

Methods: Using data from the 2017 National Survey of Precision Medicine in Cancer Treatment, we characterized confidence in using genomic testing in a nationally representative sample of 1,281 medical oncologists, hematologists, and hematologist-oncologists practicing in the United States. Genomic confidence was examined among four types of test users: next generation sequencing (NGS) users, gene expression (GE) users, both NGS and GE users, and non-users. Associations between individual- and practice-level characteristics and confidence were modelled with multinomial logistic regression. The association between confidence and test use was examined with multivariable linear regression.

Results: Over 75% of genomic test users reported they were moderately or very confident using results from somatic panel tests to guide patient care. Confidence was highest among both NGS and GE users (60.1% very confident using test results) and lowest among NGS only users (38.2% very confident using test results). Even among test non-users, 27.1% were very confident and 37.8% were moderately confident using results to guide patient care. Oncologists were most confident using single-gene tests and least confident using whole exome or genome sequencing to guide decisions. NGS and GE users who were not at all or a little confident were least likely to use the results from somatic panel tests to inform care ($p < 0.01$). The association between confidence and test use was similar for NGS only users. Training in genomics, higher patient volume, and treating solid tumors were associated with higher confidence; on-site pathology and electronic health record alerts for genomic testing were associated with lower confidence (p -values < 0.05).

Conclusion: Oncologists’ confidence varies by genomic testing platform, patient volume, genomic training, and practice infrastructure. Research is needed to identify modifiable factors that can be targeted to enhance provider confidence with genomic testing.

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Paper Session 41

3:30 PM-3:45 PM

PERCEIVED ENVIRONMENT, PARENT SUPPORTIVE BEHAVIORS AND CHANGES IN PRE-SCHOOL CHILDREN'S PHYSICAL ACTIVITY OVER THREE YEARS

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Low-income children who live in poor neighborhoods with high crime and fewer safe play areas may be at risk for low PA. Parent supportive behaviors, such as doing PA with their child, modeling PA, verbal encouragement and taking the child to places for PA are consistently associated with higher child PA. Parent supportive behaviors for child physical activity have largely been examined separately from neighborhood factors, and have rarely been examined over time in relationship to changes in child physical activity.

The present study examined the influence of neighborhood environment and parent supportive behaviors for physical activity on changes in child physical activity over a three-year period. The study is a secondary data analysis from the NET-Works randomized controlled trial (2010-2018) involving 534 ethnically/racially diverse (56% Hispanic) preschool-aged children. Measurements were conducted on a rolling basis that included all seasons at baseline and 36 months. Accelerometry data were collected at each measurement time point on both the child and the parent. Details are reported elsewhere. Cohort retention in the parent study was 92% at 36 months.

Multivariate regression models were used to separately examine associations between neighborhood environment and parent supportive behaviors, and change at 36 months in child physical activity. Separate models were run for change in child moderate/vigorous PA (MVPA) and sedentary activity. Baseline value of the respective physical activity variable was included as a covariate in each model.

In adjusted multivariate regression models, parent supportive behaviors ($B = 3.2$ [se 1.4], $p < .03$) and perceived neighborhood environment (presence of lighting, street crossings, playgrounds) ($B = 1.1$ [se .40], $p < .01$) were statistically significant positive predictors of increases in child MVPA over three years. Decreases in child sedentary behavior were significantly associated with greater perception of positive neighborhood environment ($B = -2.5$ [se .81], $p < .002$), and marginally significantly associated with parent supportive behaviors ($B = -5.3$ [se 2.9], $p < .06$).

These results suggest that interventions that target both neighborhood traffic and lighting environment and the parents' supportive behaviors could be effective to promote child physical activity over time.

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Paper Session 41

3:45 PM-4:00 PM

OBJECTIVELY ASSESSED PHYSICAL ACTIVITY AND REWARD RESPONDING IN PRESCHOOLERS

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Physical activity is crucial to mental health and wellbeing. Yet, relatively little work has focused on psychophysiological indices that may clarify relations between physical activity and mental health in young children. Using event-related potentials (ERPs), several studies demonstrate physical fitness and physical activity related improvements in cognitive and executive functioning among older children and adolescents. Whether alterations in reward circuit functioning implicated in the pathophysiology of depression can also be detected remains unexplored. The purpose of the present study was to quantify the impact of physical activity on affective neural responding assessed using the reward positivity (RewP) ERP component in preschoolers. This marker is of particular interest given known associations with the onset of mood disorders and alterations in reward circuit functioning. We hypothesized that objectively-assessed physical activity would predict RewP amplitudes, such that preschoolers with more physical activity across one week would evidence higher RewP amplitudes. Participants included 53 preschool children ages 3-5 years enrolled in a multi-wave study of physical activity and mental health recruited from the general community. Caregivers completed questionnaires about their child as well as a clinical interview assessing symptoms of psychopathology. Preschoolers were fitted with an accelerometer that was worn for one week, obtaining objective counts of physical activity and sedentary behavior. Preschoolers also completed an age-appropriate version of the Doors Guessing Task, where points can be won or lost on each trial while ERPs were recorded. The RewP was calculated as a difference score between the averaged neural responses to wins minus responses to loss in electrode site Fz from 200-350 ms. Overall, preschoolers were engaged in moderate-to-vigorous physical activity for approximately 1.4 hours per day and engaged in sedentary behavior for approximately 4 hours per day, after adjusting for nighttime sleep and napping. 17% ($n=9$) of the sample failed to meet the minimum recommended daily guidelines (less than 60 minutes) for physical activity in this age range. Linear regressions were conducted to determine whether physical activity and/or sedentary behavior were significant predictors of the RewP. After accounting for child age, sex, and negative affectivity, weekly moderate-to-vigorous physical activity was positively related to RewP amplitude [$\beta = 0.36$, 95% CI = (0.08, 0.76), $p = 0.02$]. Further, higher amounts of time spent in sedentary behavior predicted a more blunted RewP amplitude [$\beta = -0.34$, 95% CI = (-0.64, -0.06), $p = 0.02$]. Alterations in reward responding are evident among preschoolers with higher sedentary behavior and offer the first evidence for reductions in reward responding as a function of low physical activity in this young age group.

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Paper Session 41

4:00 PM-4:15 PM

PREDICTING PERSONAL PHYSICAL ACTIVITY OF PARENTS DURING PARTICIPATION IN A FAMILY INTERVENTION TARGETING THEIR CHILDREN

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Background: Parents volunteering to participate in family interventions focused on child MVPA may also be positioned to improve their own MVPA. The purpose of this study was to examine the “spillover” effect of two family interventions targeting inactive children on their parents’ MVPA over 26 weeks. The primary outcome was MVPA via accelerometry with a secondary assessment of MVPA via self-report and putative mediators. Correlates of MVPA across the trial in the form of theory of planned behavior and multi-process action control were examined as exploratory outcomes.

Methods: One hundred and two parents (of children aged 6 to 12 yr), were recruited through advertisements and randomized to either a planning + education condition (n = 52) or an education only condition (n = 50) designed to improve child MVPA. Parental MVPA was assessed via accelerometry and self-report at baseline, six-week, 13-week, and 26-week time-periods as well as assessments of the proposed correlates.

Results: The two family interventions had an increase in parental MVPA from baseline to 26 weeks ($p < .05$), but no group differences on MVPA or the putative mediators using multi-level modeling ($p > .05$). The theory of planned behavior was unable to predict MVPA across the study ($p > .05$). Application of multi-process action control showed this was likely because nearly all participants possessed the intention to be physically active. The predictor of successful-compared to unsuccessful-intenders was a stronger habit in four of the six tests employed ($p < .05$).

Conclusions: The results suggest that parent MVPA may benefit during a family-based intervention but the putative mediators of this increase are unclear. Engaging habit to assist in action control (i.e., translation of intentions into behavior) is recommended for future research in this population.

Registered Trial: clinicaltrials.gov # NCT01882192

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Paper Session 41

4:15 PM-4:30 PM

EFFECTIVENESS OF SUSTAINABILITY VIA ACTIVE GARDEN EDUCATION (SAGE) ON YOUNG CHILDREN'S LOCOMOTOR SKILLS

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Introduction: Early care and education center (ECEC) physical activity programs are important for promoting health benefits in young children, including developmental outcomes such as locomotor skills. This study examined the effects of a garden-based, physical activity intervention on preschool-aged children's locomotor skill development using quantitative and qualitative outcome measures.

Methods: Sustainability via Active Garden Education (SAGE) is a garden-based program for preschool-aged children designed to improve physical activity and fruit and vegetable consumption in ECECs. SAGE engages children in structured physical activities (e.g., gardening, relay races, dancing) that promote learning, but may also enhance locomotor development. We used a cluster-randomized controlled trial to evaluate SAGE's effectiveness on children's quantitative (progressive cardiovascular endurance run [PACER]; n=104) and qualitative (CHAMPS Motor Skill Protocol [CMSP]; n=48) locomotor skills. ECEC (N=15) were block randomized to receive SAGE or a child safety comparison condition. Intervention children that completed the PACER (52.9±4.2 months; 73.4% Hispanic; 50% male) and CMSP (52.7± months; 68.8% male; 68.8% Hispanic) were not significantly different by age, ethnicity, or sex from control children that completed the PACER (54.5±4.8 months; 84.4% Hispanic; 51.5% male) and CMSP (54.6±5.0 months; 56.3% male; 85.7% Hispanic), respectively ($ps > .05$). We evaluated intervention outcomes using mixed effects linear regression models.

Results: Overall, children's average PACER laps (3.7±2.3 to 4.0±2.0) and CMSP criterion (20.0±5.0 to 22.1±5.0) increased from baseline to post-intervention. At post-intervention, both conditions (SAGE and control) increased their number of PACER laps completed. Children in the SAGE condition (0.3±2.1 laps) did not significantly improve by more laps than children in the control condition (0.4±2.1 laps). For the CMSP, children in the SAGE condition had a substantial increase in the number of criterion met (2.9±4.3), compared to children in the control condition (0.5±4.3). Mixed linear regression models, controlling for school level clustering, baseline locomotor score, and sex, revealed that the SAGE intervention was not significant for improving quantitative PACER scores ($b = -0.2 \pm 0.6$; $p = 0.723$), but was marginally significant for qualitative CMSP outcomes ($b = 2.3 \pm 1.2$; $p = 0.051$).

Discussion: Locomotor skills are a critical component of ECEC teacher's evaluation standards for children's development. To address these standards, ECEC teachers need programs that engage children in physical activity throughout the school day. SAGE offers a promising, structured program that ECEC teachers can apply during the school day, which meets national accreditation guidelines for development and engage children in a unique learning experience.

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CITATION AWARD WINNER

Paper Session 41

4:30 PM-4:45 PM

ENHANCING YOUTH'S PHYSICAL ACTIVITY IN URBAN NEIGHBORHOODS VIA GREEN SCHOOLYARD TRANSFORMATIONS

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Background: Urban communities often have less access to nature and safe outdoor spaces, limiting opportunities for youth to engage in physical activity (PA). Transforming existing schoolyards into vibrant green spaces with developmentally appropriate play structures may be one way to overcome this challenge. Although prior work suggests that transformed green schoolyards demonstrate improvements in utilization and PA over time (Bates, Bohnert & Gerstein, 2018), the current study is the first to analyze changes in utilization and PA prior to and following a green schoolyard transformation among youth living in urban areas.

Methods: Using a multi-method evaluation strategy based on the RE-AIM framework, data were collected at two schoolyards in the city of Chicago prior to (T1) and following (T2) the transformation. Participants included children pre-k through 8th grade (51.9% male), and majority of children observed were African American (47.1%) or Latino/Hispanic (49.9%). Behavioral mapping techniques (Cosco, Moore, & Islam, 2012) were employed to capture both utilization and ratings of PA on the schoolyard (Child Activity Rating Scale; Durant et al., 1993). In addition, caregivers, teachers, and community members completed surveys assessing levels of schoolyard utilization and opportunities for PA (T1n = 178; T2n = 204).

Results: Several analyses, including t-tests, ANOVAs, and chi-square were used to examine changes in utilization and PA from T1 to T2. Behavioral maps indicated greater utilization of the schoolyard following the renovation, most notably prior to school (T1n = 295; T2n = 364) and afterschool (T1n = 85; T2n = 450). Caregivers and teachers also reported that the schoolyard was better utilized at T2 as compared to T1 during before and after school periods [$t(99) = -5.136$, $p < .001$; $t(142) = -3.489$, $p < .01$; $t(95) = -.3728$, $p < .001$; $t(133) = -3.860$, $p < .001$]. Levels of moderate-to-vigorous PA (MVPA) increased significantly from T1 to T2 at one school, $X^2 = 7.90$, $p < .01$, but not the other. Finally, caregivers and community members indicated that they used the schoolyard more for their children to play [$t(164) = -5.536$, $p < .001$; $t(33) = -2.175$, $p < .05$] and they felt the neighborhood was safer for children to play outside during the day [$t(153) = -2.587$, $p < .05$; $t(32) = -2.53$, $p < .05$] at T2 as compared to T1.

Conclusions: These findings suggest that green schoolyards may offer safe spaces for children to be physical active within high-crime urban neighborhoods.

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Paper Session 42

3:30 PM-3:45 PM

PREMATURE MORTALITY ASSOCIATED WITH BEHAVIORAL HEALTH CONDITIONS DESPITE ACCESS TO COMPREHENSIVE HEALTH CARE SERVICES

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Background: Individuals with severe mental illness (SMI), including psychotic, bipolar, and other affective disorders, die earlier than peers in the general population, usually of physical health conditions. Studies of U.S. public mental health service consumers attribute 15-30 years of reduced lifespan to SMI. However, most studies have not examined this mortality risk among a broader socioeconomic spectrum of insured individuals with access to comprehensive medical and behavioral health care, nor has research closely assessed the role of substance use disorders (SUDs), a common behavioral health comorbidity.

Purpose: Using 2010-2017 death records and electronic health records, we examined all-cause and cause-specific mortality, age of death, and health care use patterns associated with SMI and SUDs among members of an integrated healthcare delivery system in the U.S.

Method: Participants included 285,966 adult health system members with a documented SMI or SUD diagnosis in 2010 (behavioral health [BH] group) and 285,966 individuals with no BH diagnosis in 2010 matched on age, gender, and medical facility (comparison group). Multivariable models assessed BH diagnosis-specific mortality risk adjusting for race/ethnicity, socioeconomic status, health status, and smoking history.

Results: Physical health conditions (e.g., heart disease) accounted for 92.6% and 95.7% of deaths in the BH and comparison groups, respectively. Of the SMI conditions, psychotic disorders were associated with the highest all-cause mortality risk (adjusted OR [aOR] = 3.49; 95% confidence interval [CI]: 3.03-4.02), followed by bipolar disorders (aOR = 2.07; 95% CI: 1.81-2.38) and other affective disorders (aOR = 1.71; 95% CI: 1.67-1.76) relative to comparison individuals. Having a SUD (regardless of SMI diagnosis) conferred equivalent all-cause mortality risk as having a psychotic disorder, relative to comparison individuals (aOR = 3.48; 95% CI: 3.27-3.70). Cause-specific mortality risk results showed similar patterns. Of participants who died, individuals in the BH group died on average 6 years earlier than comparison individuals. The BH group used health services, including primary care, at higher rates than the comparison group. (All comparisons significant at $p < 0.001$.)

Conclusions: Even in an insured population, with broad access to medical and mental health services, and accounting for other confounding factors, SMI and SUDs were associated with significant excess mortality, often due to physical health conditions. Health care system approaches that integrate care for physical and behavioral health conditions are needed for this vulnerable population.

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Paper Session 42

3:45 PM-4:00 PM

MESSAGE RECALL AND EYE TRACKING OF TEXT AND IMAGES IN SKIN CANCER PREVENTION PSAS

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Skin cancer in its various forms is the most commonly diagnosed cancer in the United States. Prevention guidelines recommend the practice of sun protection behaviors (e.g., using sunscreen) and avoiding indoor tanning. PSA videos are frequently used in health communication efforts to persuade and inform audiences. The videos are often a combination of images and text, and eye tracking analyses allow researchers to discern what features or design elements in the composition of a message/video hold an audiences' gaze, if not attention. Attention has been observed to be positively associated with recall and knowledge. We conducted two lab experiments using PSAs to encourage the recommended sun protection behaviors (Study 1; n=126) and to promote quitting indoor tanning (Study 2; n=44). Eye tracking recorded participants' gaze on objects of interest (AOIs), either text or images, that were identified a priori by the research team as central to the PSA. Recall of the AOIs after a two week follow-up was assessed. T-tests and Chi-square statistics were used to determine the relationship between recall (3 categories- none, some, all) and the percent total average fixed duration (i.e., amount of time eyes were fixed to each object). Results demonstrated that participants were more likely to correctly recall images associated with the videos compared to text. The more time spent fixed on images, the better the recall compared to those who recalled no images ($F(2)=4.78$, $p < .01$). Recall also improved as initial engagement (i.e., fixation on the first video image) increased ($F(2)=3.33$, $p < .05$). Implications for the development of effective health care messaging will be discussed.

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Paper Session 42

4:00 PM-4:15 PM

POLICY EVALUATION OF A STATEWIDE LAW MANDATING SCHOOL-BASED FITNESS AND BODY MASS INDEX MEASUREMENT AND REPORTING

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Introduction: To combat the childhood obesity epidemic, many states have passed legislation requiring schools to measure fitness and body mass index (BMI) in children (surveillance), with or without the additional requirement to report results to parents (screening). Evidence on effectiveness and cost-effectiveness of these policies are mixed and therefore so are recommendations from leading medical/public health organizations. In this study, we evaluate a statewide school-based fitness and BMI surveillance and screening law that has been fully implemented in Georgia since 2012, based on four attributes of policy implementation: 1) parental awareness of the policy; 2) parental awareness of his/her child's own fitness assessment results; 3) usage of fitness results in modifying behavior and seeking medical care, if applicable; and 4) perceptions of fitness assessments in schools.

Methods: State-wide survey data were collected from random-digit dial and online (Qualtrics Online Sample) from April to December 2018, for a total sample of N=1683 respondents. All respondents were 18 years and older, a parent/legal guardian of a child in 5th through 8th grade attending a public school in Georgia, able to respond in English or Spanish, and not employed as a teacher or administrator in the public-school system.

Results: Although most parents (92%) had never heard of the specific fitness and BMI assessment legislation, more than half

(>52%) of all parents reported that their child participated in one component of the mandatory fitness assessment. However, only 31% of parents reported receiving fitness and BMI results. For these parents, 65% reported talking to their child about the report, while less than half (43.7%) reported talking to the child's doctor. The majority of all parents were in favor of nutrition education (80%) and physical activity opportunities (94%) for their children in schools; but fewer parents were in favor of mandatory BMI screening as a state policy (45%).

Discussion: Overall this study shows that a state-level law mandating fitness and BMI assessment for children may be successful in school-based surveillance of physical activity and obesity levels, but fails in terms of public awareness, individual receipt of screening information and behavior change, and public perception of the appropriateness of the policy.

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Paper Session 42

4:15 PM-4:30 PM

EFFECT OF CALIFORNIA “COMPETITIVE” FOOD AND BEVERAGE POLICIES ON WEIGHT STATUS AMONG HIGH SCHOOL STUDENTS

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Background: Competitive food and beverage policies (“CF&B policies”) have been adopted to help prevent childhood obesity. However, few studies have examined their influence on obesity and obesity disparities among high school students.

Objective: To investigate whether the association between California’s CF&B policies and overweight/obesity varies by race/ethnicity among high school students.

Methods: Using statewide California data from 9th Grade students in public schools along with a quasi-experimental design, gender-stratified multilevel logistic models estimated trends in overweight/obesity between the periods before 2002-2007 and after 2008-2012 enactment of CF&B policies and assessed whether those trends differed significantly by race/ethnicity. Models were adjusted for student-level variables (age, race/ethnicity, physical fitness) and school-level socioeconomic factors.

Results: Before the policies were enacted (2002-2007), overweight/obesity was significantly increasing among both boys and girls and across all race/ethnic groups. In the post-policy period (2008-2012), overweight/obesity declined over time among boys of all racial/ethnic groups though the decline was not significant among Asian students. Overweight/obesity prevalence was no longer significantly increasing for Asian, African American and White girls, and showed slight, though non-significant, annual declines among Latina girls. The association between the policies and overweight/obesity varied significantly by race/ethnicity. Asian girls experienced the largest change in the overweight/obesity trends, followed by Latinx, White and African American girls. Among boys, Latino children saw the largest change in overweight/obesity trends, followed by African Americans, Asians and Whites.

Conclusion: Within California’s overall positive policy environment to halt the obesity epidemic, the CF&B policies are associated with improvements in population-level overweight/obesity prevalence among students in high schools, with differences in the magnitude of those improvements by race/ethnicity.

Implications for Practice and Policy: Policies to regulate junk food and sugary drinks in schools may be an effective strategy to prevent obesity among students in high schools and achieve health equity. Examining the joint role of policies to modify the food environment within and outside schools may provide additional strategies to fully reverse the obesity epidemic.

Support/Funding Source: NHLBI and RWJF.

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Paper Session 42

4:30 PM-4:45 PM

THE POTENTIAL PUBLIC HEALTH IMPACT OF A DEPRESSION AND WEIGHT MANAGEMENT INTERVENTION: LESSONS FROM THE RAINBOW TRIAL

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Background: The Research Aimed at Improving Both Mood and Weight (RAINBOW) trial demonstrated that an integrated and collaborative care intervention significantly improved obesity and depression. We used an effectiveness-implementation hybrid type 1 approach employing the RE-AIM framework to study stakeholder perspectives of the intervention’s implementation and potential public health impact.

Methods: We conducted 185 semi-structured interviews with 148 patient participants (out of 409 total) and 37 clinical stakeholders (e.g., physicians, medical directors, and clinical managers) at primary care practices where the trial was conducted. The interviews included 74 at baseline, 32 at 6 months (end of intensive treatment), 36 at 12 months (end of maintenance treatment), and 43 at 24 months (end of post-treatment follow-up). Interviews were recorded, transcribed, coded and analyzed with NVivo using a Framework Analysis approach to identify themes in the data. Coders’ Kappa scores were .53-1.00 across codes which is considered moderate to excellent agreement. Here we present findings related to RE-AIM’s effectiveness dimension.

Results: At baseline, both stakeholder groups saw the promise of an integrated and collaborative approach to addressing obesity and depression. Stakeholders voiced concerns about the time, resource intensity, and challenges of changing multiple weight/lifestyle behaviors and managing mood at the same time. Clinical stakeholders expressed skepticism that this approach could work for different patient subgroups (e.g., older vs younger ages). Over time, patient stakeholders reported benefit from improved problem solving skills and greater social support, but desired more individual tailoring and accountability for making changes. Over time, clinical stakeholders stated that the expertise provided from a team-based collaborative approach was effective across diverse patient groups (e.g., age and other SES factors). They continued to voice concerns about how this approach could be implemented as standard practice and incentivized due to the additional time required to deliver collaborative care.

Conclusion: Stakeholders’ perceptions of an integrated and collaborative approach to managing obesity and depression suggest that effectiveness at scale could hinge on providing patients with tailored content and greater accountability while clinical stakeholders viewed resources and incentives in a primary care context as the linchpin for wider uptake and implementation of the approach to impact public health.

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Paper Session 43

3:30 PM-3:45 PM

EXAMINING ASSOCIATIONS BETWEEN UNMET SOCIAL NEEDS AND HEALTH AMONG MEDICAID BENEFICIARIES

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Background: Having unmet social needs such as housing or transportation impedes disease management and health behavior change that could increase negative health outcomes and costly healthcare utilization. Most research to date has examined associations between a single social need (e.g., food insecurity) and a few health-related outcomes in a specific population subgroup (e.g., parents with young children). To extend this work, we examined a larger set of social needs and health-related outcomes in a sample of adult Medicaid beneficiaries in Louisiana.

Methods: Members (n=10,267) of the Louisiana Healthcare Connections (LHCC) Medicaid health plan completed a 10-item social needs assessment by phone July 10, 2018 to June 28, 2019 as part of standard service. Questions assessed members' expectations for having enough food, housing (2), physical safety (2), childcare, transportation, ability to pay for utilities, necessities, and unexpected expenses in the next month. Sum scores were created; higher scores reflect a greater number of unmet needs. Social needs data were linked to member's medical and pharmacy claims data and other LHCC interviewer-administered assessments for general health risk, depression (PHQ-2), and substance abuse (CAGE-AID) completed within the 12 months prior to the social needs assessment. Descriptive statistics and bivariate associations are reported.

Results: Most members were female (72%), African American (45%) or White (32%), and had Medicaid through SSI (22%), TANF (20%) or expansion (55%) programs. Most (55%) reported at least one unmet need (M=1.1, SD=1.4) including not having enough money for unexpected expenses (47%) or necessities like food, shelter and clothing (14%), and utilities (12%). Of the subset who had children and needed childcare, 43% had problems finding or paying for it. Having a greater number of unmet needs was associated with greater health care utilization: PCP ($F=16.55$, $p<.0001$), ER ($F=21.43$, $p<.0001$), and inpatient ($F=3.89$, $p=.021$) visits. Having a greater number of unmet needs was associated with having a chronic condition, a vision, hearing or mobility problem, nicotine dependence, depressive symptoms, and problems taking medications as directed ($p<.001$).

Conclusions: While the direction of causality is not known, our findings support associations between social needs and diverse health-related outcomes. This study is novel in its state-wide representation, linking of self-report and claims data, and study of multiple unmet needs and health outcomes. Future analyses will include additional outcomes and examine differences by type and cluster of social needs and for different chronic conditions and combinations. These results support efforts to integrate systematic screening and interventions to address unmet needs into healthcare systems to improve health outcomes.

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Paper Session 43

3:45 PM-4:00 PM

ADDITIVE EFFECTS OF GLOBAL STRESS AND DAILY GENERAL AND TYPE 1 DIABETES STRESSORS DURING EMERGING ADULTHOOD

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Emerging adulthood is described as a high-risk time due to the transitional nature of this time period and the additional new contexts that emerging adults must navigate (work, college, new friends). We know that daily diabetes stressors are associated with poorer well-being (affect) and diabetes management in adolescents (Lansing et al., 2016). However, little is known about how stressors of daily life—outside of diabetes—and more global stress may contribute to daily well-being and diabetes outcomes. Furthermore, it is unclear if and how global stress may amplify the effects of daily diabetes and general stressors on well-being. Two-hundred and twelve emerging adults (aged 18.81, 66% female) with type 1 diabetes (length of diagnosis 8.47 years; mean HbA1c of 8.93) completed the Perceived Stress Scale (Cohen & Williamson, 1998) to measure global stress. In addition, individuals completed a brief checklist (1 = *yes*, 0 = *no*) for 14 consecutive days indicating their experience of 5 daily diabetes stressors (e.g., taking wrong insulin dose) and 6 daily general stressors (e.g., problem with work or chores, argument with someone). To assess daily affect, individuals rated a total of 18 daily emotion words (1 = *not at all*, 5 = *extremely*) with 9 words each reflecting positive (PA) and negative affect (NA). To assess daily diabetes outcomes, individuals rated self-care behaviors and reported their daily blood glucose (BG). Results from multi-level analyses with global stress, general and diabetes stressors (both within- and between effects) indicated that global stress was associated with greater NA and lower PA. In addition, on days in which individuals experienced more general and diabetes stressors than their average (within-person effects) they also experienced more daily NA and less daily PA. Global stress amplified the effect of daily diabetes and general stressors on mood, such that disruptions to NA were greater for those experiencing more global stress. For diabetes outcomes, global stress was associated with lower self-care behaviors and higher BG mean. Both within- and between-effects of diabetes stressors revealed that higher diabetes stressors were associated with lower self-care behaviors and higher BG mean. Emerging adults' global stress is associated with their well-being and diabetes outcomes above and beyond the experience of daily diabetes stressors.

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Paper Session 43

4:00 PM-4:15 PM

THE ROLE OF DIFFICULTIES IN EMOTION REGULATION AND DEPRESSIVE SYMPTOMS IN INSULIN OMISSION TO LOSE WEIGHT

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Insulin omission to lose weight (IOLW) is a serious concern for those with type 1 diabetes (T1D), predicting subsequent complications and mortality. It is, thus, imperative to understand factors that may elevate IOLW, especially during late adolescence when risk behaviors are increasing and T1D management is low. We examined mediation and moderation models to understand how two interrelated factors – depressive symptoms and difficulties in emotional regulation – are related to IOLW during late adolescence. Seniors in high school with T1D longer than one year ($N = 247$) completed measures of depressive symptoms (CESD), difficulties in emotion regulation (DERS), and diabetes self-management behaviors, as well as a one-item measure of insulin omission for the purpose of losing weight, and a home assay kit to assess HbA1c. Analyses were run using the PROCESS macro, binary logistic regressions, t -tests, and correlations in SPSS. Consistent with prior research, most participants reported they never skip insulin to lose weight but 39 (17%) reported they skip insulin for the specific purpose of losing weight at least some of the time. Individuals who indicated they sometimes skip insulin to lose weight had higher (poorer) HbA1c than those who never skip insulin, $t(232) = -2.852, p = .005, (M = 8.94$ vs 8.14% , which is a clinically meaningful difference). IOLW groups did not differ on self-management behaviors, $t(225) = 1.541, p = .125$, suggesting IOLW is a risk behavior rather than simply an indicator of poor self-management. Each of the five DERS subscales and depressive symptoms were individually correlated with greater IOLW (r values $> .14, p < .03$). When depressive symptoms and DERS subscales were examined simultaneously in logistic regressions, however, only depressive symptoms were consistently and uniquely associated with IOLW ($B > .04, p < .05$). Tests of moderation revealed no significant interactions between depressive symptoms and DERS subscales (p values $> .70$), suggesting that depressive symptoms pose risks for IOLW even among those with good emotion regulation skills. Tests of mediation indicated each DERS subscale scores was associated with IOLW indirectly through greater depressive symptoms. Programs to develop emotion regulation skills and screening for IOLW especially among those with difficulties in emotion regulation or elevated depressive symptoms may be helpful at this high-risk time of development.

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Paper Session 43

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DIABETES DISTRESS MEDIATES THE RELATIONSHIP BETWEEN DEPRESSIVE SYMPTOMS AND GLYCEMIC CONTROL AMONG PEOPLE WITH TYPE 2 DIABETES

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The relationships among depressive symptoms, diabetes distress and glycemic control are complex. The co-occurrence of depressive symptoms with diabetes is associated with poorer glycemic control, more severe functional impairments, and poorer self-management behaviors. Distress regarding the demands of diabetes care and threats of its complications, called “diabetes distress,” is correlated with depression but a distinct construct. People can be depressed without distress about their diabetes, while others may be distressed by the demands of diabetes in the absence of depression. Previous studies show that diabetes distress is significantly associated with poor glycemic control, poor self-care behaviors, and poor quality of life among those with type 2 diabetes, even after controlling for depression. Moreover, diabetes distress has been proposed as a mediator between depressive symptoms and diabetes self-care and clinical outcomes such as blood glucose. However, this hypothesis has not been widely tested.

Using data from five collaborating US sites studying peer support for diabetes management among underserved populations ($n = 917$), this study examined the relationships of depressive symptoms (PHQ-8), diabetes distress (brief, 4-item scale adapted from Diabetes Distress Scale), and HbA1c (measure of blood glucose level over previous three months) from baseline to post-intervention. Post-intervention follow-up varied across sites from 6 to 12 months following baseline and so was controlled, along with demographics and intervention group assignment in all analyses. Diabetes distress, depressive symptoms, and HbA1c each decreased over time ($ps < .05$). Depressive symptoms, diabetes distress, HbA1c were all correlated with each other both cross-sectionally and from baseline to post-intervention (rs from $.10$ to $.57; ps < .05$). Structural equation modeling showed that post-intervention diabetes distress mediated the relation between baseline depressive symptoms and post-intervention HbA1c (indirect effect: $b = .013, p < .001$), controlling for baseline HbA1c. In parallel analyses, however, depressive symptoms did not mediate the relation between diabetes distress and HbA1c. These findings add support for the role of diabetes distress as a mediator of the effects of depression. Generalized attention to depression without attending to the reasons for diabetes distress may account for reports of failure of treatment of depression to benefit diabetes management.

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Paper Session 43

4:30 PM-4:45 PM

ASSESSING QUALITY OF LIFE AND BIOCHEMICAL PARAMETERS AMONG ADULTS WITH DIABETES

Rachel Stackhouse, B.A.¹, Andrew Nicholson, MSPH², Stephanie Rettig, MPH³, Jackie Ridgley, BA⁴, Binhuan Wang, PhD⁵, Sundar Natarajan, MD, MSc⁵¹NYU Medicine/Veterans Affairs New York Harbor Healthcare System, New York, NY; ²VA NY Harbor Healthcare System, New York City, NY; ³VA New York Harbor Healthcare System, New York, NY; ⁴NYU Langone / VA NY Harbor Healthcare, New York, NY; ⁵NYU School of Medicine, New York, NY**Background:** Diabetic foot ulcer (DFU) is a common complication of diabetes mellitus and may lead to other serious complications such as infection, amputation, and death. Risk factors for a DFU include neuropathy and a prior DFU. While a history of a DFU can lead to a lower quality of life and impaired kidney function, it is unknown how these factors compare in at-risk patients with neuropathy but with no history of a DFU.**Objective:** To compare quality of life, kidney function, and sociodemographic information among individuals with history of a DFU and those without a previous DFU.**Methods:** We used data from two behavioral intervention trials, one that targets preventing recurrent DFU (secondary prevention) while the other targets preventing the first DFU (primary prevention). Assessments included the Foot and Ankle Ability Measure (FAAM) for foot-specific quality of life; the Veterans RAND 12-Item Health Survey (VR-12) and European Quality of Life (EQ-5D) instrument for general quality of life; number of adverse events; urinary sodium to creatinine ratio (UNa/UCr) to determine sodium intake; urinary protein to creatinine ratio (UPr/UCr) and estimated glomerular filtration rate (eGFR) for kidney function. Comparisons were made using Fisher's exact test for categorical variables and Wilcoxon-Mann-Whitney tests for continuous variables.**Results:** Data were from 236 participants with previous DFU and 406 participants without. Compared to Veterans without a prior DFU, Veterans with a history of a DFU were younger (68.6 vs. 70.3 years, $p = 0.0232$), had a lower body fat percentage (25.0 vs. 29.0, $p = 0.0004$), and were less likely to be married or with a partner (36.0 % vs. 43.5%, $p = 0.080$). Those with a history of a DFU also had lower eGFR (73.12 vs. 79.96 mL/min, $p = 0.0006$), higher UNa/UCr (9.45 vs. 8.73, $p = 0.5180$), and a higher UPr/UCr (0.54 vs. 0.34, $p = 0.0273$). Interestingly, no significant differences were found between the two groups for general quality of life, disease-specific quality of life, or the percentage of participants experiencing an adverse event.**Conclusion:** Adults with a previous DFU had higher sodium intake and poorer kidney function compared to those without a prior DFU but with neuropathy. However, we found no difference in either disease-specific or general quality of life for patients with history of a DFU compared to patients without.**CORRESPONDING AUTHOR:** Rachel Stackhouse, B.A., NYU Medicine/Veterans Affairs New York Harbor Healthcare System, New York, NY; rachelstackhouse@gmail.com

CITATION AWARD WINNER

Paper Session 44

3:30 PM-3:45 PM

TARGETING SELF-REGULATION SKILLS IN CHILDREN TO PROMOTE HEALTH BEHAVIORS: CLINICAL TRIAL RESULTS

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Self-regulation is implicated in the development of physical and mental health conditions that have detrimental personal and societal costs. Self-regulation challenges are linked to difficulties harnessing cognitive, emotional, and motivational resources to achieve goals and may contribute to unhealthy behaviors. Enhancing self-regulation skills early in life has the potential to increase positive health outcomes. During school-age years, children's self-regulation skills undergo rapid development due to maturation of brain areas that support these skills, as well as increasing autonomy related to health behaviors and increasing environmental demands (e.g., social, academic) that require self-regulation.

This paper presents results from a clinical trial using a Multiphase Optimization Strategy study design and Science of Behavior Change experimental medicine approach (Nielsen et al., 2018) to test different behavioral interventions to enhance self-regulation in children. Research has identified several important components to self-regulation including executive functions, emotion regulation skills, future-thinking, and approach bias. Interventions targeted each of these self-regulation domains and were further evaluated to determine the most effective combinations. Participants were 118 children (ages 9-12 years; $M = 10.2$) from low-income families who were randomized to receive up to four interventions. Interventions were delivered via home visits and implementation fidelity and dosage were assessed. Self-regulation targets were assessed using behavioral tasks, interviews, parent- and child-reported surveys.Results indicated that self-regulation targets could be reliably assessed in a low-income sample of children and that interventions were delivered with high fidelity. Intervention effects were small-to-moderate ($.03 < d < .65$), and effect sizes varied somewhat by assessment method. Intervention effects were strongest for emotion regulation and future-thinking skills and reached statistical significance. Tests of combined interventions revealed that reduction in anger dysregulation was strongest for emotion regulation intervention alone, and moderate for children who completed a combination of emotion regulation, executive function, and future-thinking interventions. Improvement in future-thinking was driven by the future-thinking intervention alone, rather than a combination of different interventions. Smaller effects on executive functions and approach biases have important implications for future interventions to consider the role of cognitive development and evaluate the optimal age period to promote self-regulation. Implications of self-regulation focused interventions for health promotion among low-income children who are at high risk for poor self-regulation and health disparities will be discussed.**CORRESPONDING AUTHOR:** Sharon L. Lo, PhD, University of Michigan, Ann Arbor, MI; sharlo@umich.edu

Paper Session 44

3:45 PM-4:00 PM

THE RELATIONSHIP BETWEEN PARENT HEALTH LITERACY, CHILD HEALTH LITERACY, AND CHILD EATING BEHAVIORS

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Background: Health literacy (HL) affects the uptake of health behavior interventions and is implicated in health disparities. Children develop HL via parents' scaffolding, modeling, and providing opportunities for practice of the skills. In adults, HL is positively related to health behaviors and health decision-making, however little is known about the relationship between parent and child HL and children's behavior outcomes. Dietary behaviors are poor among children despite its impact on long-term chronic disease risk. Understanding the relationship between parent and child HL and children's dietary behaviors will inform intervention strategies to improve behaviors. We are particularly interested in pre-adolescent children given that their dietary decision-making is complicated by their increased autonomy for dietary behaviors while simultaneously being reliant on parents for food availability and subjected to some parental rules about food. We expect parent HL to be positively related to child HL, and parent and child HL to be related to dietary behaviors.

Method: Data were collected from parents and children 9-12-years-old (N = 71, 51% girls, 45% Black/African American, 34% low income). Parents completed a HL measure. Children completed measures of HL and dietary behaviors. Child dietary behaviors were categorized into daily servings of fruits and vegetables, junk foods, and number fast food restaurant visits. Regression analyses were computed to predict: (1) child HL from parent HL and; (2) child dietary behaviors from child and parent HL.

Results: After accounting for children's age and gender, parent HL was positively related to child HL ($R^2=.37$; $\beta=.029$, $p=.02$). Children's HL and dietary behaviors were unrelated. However, parent HL was negatively related to children's fast food intake ($R^2=.42$; $\beta=-0.41$, $p=.001$) and approached significance for junk food.

Discussion: HL, a type of cultural health capital, has long-term impact on health. The positive relationship between parent and child HL supports HL as intergenerational; thus, targeting parent HL likely improves the long-term health and reduces health disparities of multiple generations. Despite increased autonomy, preadolescent children are still primarily reliant on parents for their dietary options and this likely explains the nonsignificant results for child HL and dietary behaviors. Parent HL likely impacts parents' decision-making for food availability and food parenting practices, hence the negative relationship between parent HL and children's fast food intake. Future studies should explore the temporal relationship between child HL and dietary behaviors as well as the trajectory for the development of child HL to determine the most opportune time for intervening on children's HL skills to affect behavior change.

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Paper Session 44

4:00 PM-4:15 PM

HOW MOTHERS' BEHAVIORS IN A STRUCTURED EATING TASK ALIGN WITH PARENT CHILD INTERACTION THERAPY SKILLS & IMPACT CHILDREN'S EATING

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Early childhood is a critical period for the development of healthy eating behavior. We aimed to examine how mothers' behaviors during an eating scenario align with evidence-based parenting skills (e.g., Parent-Child Interaction Therapy (PCIT)) and to determine how these skills impact children's eating. We observationally coded videos of dyadic parent-child interactions for 50 mothers and 50 children (ages 4 to 7 years old) from a primarily low-income population. We examined interactions during a structured eating task [e.g., taste-testing of 4 different foods: green beans (familiar, vegetable) cupcake, (familiar, sweet), artichoke (novel, vegetable), and halva (novel, sweet)] by first, applying the PCIT coding scheme [measured in two phases: 1) Child-Directed Interaction (CDI) phase, which uses a particular skillset to strengthen the parent-child bond, and 2) the Describe, Approach, Direct command, and Selectively attend (DADS) phase, which capitalizes on the bond strengthened by CDI and encourages children to approach novel or anxiety-provoking stimuli by incorporating direct commands and selective attention], to determine if these skills are applicable during an eating situation. Applying and coding PCIT skills in an eating scenario and obtaining adequate reliability established feasibility (average reliability: 83% agreement and 0.77 kappa for the frequency/sequence-based method). Second, using multilevel lag sequential analysis, we assessed how the use of CDI and DADS "Do" and "Don't" skills related as an antecedent to children's eating behavior. When examining all antecedent-consequences of interest overall, a CDI and DADS "Do" was more likely to be followed by child eating ($p=.03$; $p < .01$, respectively). Examining bites of food specifically, children were more likely to eat in response to a CDI and DADS "Do" rather than a "Don't" (CDI $p < .01$; DADS $p < .01$). Lastly, when examining how children respond to a "Do", children were more likely to eat following a DADS "Do", rather than engage in other behavior ($p=.02$); however, this was not significant for the CDI model ($p=.87$), suggesting that the unique features of DADS skills are more effective at encouraging eating relative to other behavior when compared to CDI skills. This study used novel methodology and expands prior work around dyadic interactions during eating scenarios. Findings demonstrate that PCIT "Do" skills encourage eating and may help children overcome food neophobia and increase consumption of a variety of healthy foods.

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Paper Session 44

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OMEGA-3 FATTY ACID COMPOSITION OF HUMAN MILK IS ASSOCIATED WITH INFANT TEMPERAMENT

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Background: There is growing evidence that omega-3 fatty-acids are important for brain development in childhood and are necessary for optimal health in adults. Yet, there have been no studies examining how the fatty-acid composition of human milk influences infant behavior or temperament. The aim of this study was to determine the relation between human milk fatty acid composition and temperament in the breastfed infant.

Methods: 52 breastfeeding mothers provided milk samples at 3 months postpartum and completed the Infant Behavior Questionnaire (IBQ), a widely used parent-report measure of infant temperament. Milk was assessed for omega-3 fatty-acids (linolenic acid-ALA, eicosapentaenoic acid-EPA, docosahexaenoic acid-DHA, Eicosatrienoic Acid) and omega-6 fatty-acids (linoleic acid, arachidic acid, linoleic acid, linolenic acid, Dihomo-gamma-linolenic acid-DGLA, Arachidonic acid-AA, Eicosadienoic acid). Total milk fat and the ratio of omega-6/omega-3 fatty acids were also examined.

Results: Regression models revealed that babies whose mothers' milk was richer in omega-3 fatty acids displayed lower scores on the negative affectivity dimension of the IBQ ($\beta = -.335$, $p = .015$). Repeating the analyses with each of the negative affectivity subscales revealed similar negative associations for sadness ($\beta = -.028$, $p = .048$), and distress to limitations ($\beta = -.037$, $p = .006$). These associations remained significant after statistically adjusting for maternal age and education level, which were both positively correlated with omega-3 fatty acids levels in milk. Omega-6 fatty acids and total fat concentrations of milk were also negatively related to infant distress to limitations, although these associations were not long statistically significant after maternal age and education level were included in the model. Omega-6/ omega-3 fatty acid ratio was not related to infant temperament.

Conclusions: These results support the idea that omega-3 fatty acids may be beneficial for the developing infant brain. Further, the results suggest that mothers may have the ability to shape the behavior of their offspring by adjusting the fatty acid composition of their milk.

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Paper Session 44

4:30 PM-4:45 PM

EXAMINING FOOD PREFERENCES AND CONSUMPTION FOR SUGAR SWEETENED BEVERAGES AND FRUITS AND VEGETABLES IN PARENT-ADOLESCENT DYADS

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Food preferences are associated with consumption but this association has been underexplored in dyads. Further, the degree to which access to foods, based on area-level socioeconomic status (SES), moderates these associations is unknown. The purpose of this study was to estimate dyadic associations between preferences and consumption of sugar sweetened beverages (SSB) and fruits/vegetables (FV) and to explore moderation by area-level SES. Data came from the Family Life Activity Sun Health and Eating (FLASHE) study among 1303 parent-adolescent dyads. Preferences for SSB and FV each included two items. Outcomes were predicted daily teaspoons of sugar intake from SSBs and predicted daily cups of FV. An Actor-Partner Interdependence Model (APIM) determined the dyadic association between preferences for SSB/FV and consumption, adjusted for parent and adolescent sex, age, race/ethnicity, and BMI, and parent education. Models were then stratified by area-level SES within a 1200 meter circular distance from dyads' home, which was categorized into tertiles. For SSB, the APIM revealed actor effects for parents (e.g., parent preferences predicting parent consumption, $\beta = 0.43$, $p < 0.01$) and adolescents ($\beta = 0.22$, $p < 0.01$), and a parent partner effect, such that increasing parent preferences for SSB was associated with increasing adolescent consumption ($\beta = 0.13$, $p < 0.01$). In stratified analyses, the parent actor effect was higher among parents in the lowest ($\beta = 0.46$, $p < 0.01$) vs. highest SES tertile ($\beta = 0.37$, $p < 0.01$). For FV, the APIM revealed actor effects for parents ($\beta = 0.22$, $p < 0.01$) and adolescents ($\beta = 0.34$, $p < 0.01$), and an adolescent partner effect such that increasing adolescent FV preferences were associated with increasing parent consumption ($\beta = 0.12$, $p < 0.01$). The correlation of FV preferences between parents and adolescents decreased as SES increased ($r = 0.37$ for the lowest vs. $r = 0.15$ for highest tertile). We found evidence of dyadic associations for SSB and FV preferences and consumption in parent/adolescent dyads, with partner effects differing by type of food. Specifically, parent SSB preferences could negatively impact adolescents by increasing their SSB consumption, while adolescent FV preference is potentially beneficial, as it was associated with increased FV consumption in the parent. Combined with the presence of effect modification by area-level SES, these results highlight the potential role of the neighborhood and family in interventions to modify eating behaviors.

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Paper Session 45

3:30 PM-3:45 PM

A WEB-BASED EXECUTIVE FUNCTIONING INTERVENTION FOR ADOLESCENTS WITH EPILEPSY: EPILEPSY JOURNEY

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Introduction: Executive functioning (EF) includes skills necessary for goal-directed and complex activities such as problem-solving, initiating, monitoring, organizing, planning, self-regulating, and using working memory. One-third to half of youth with epilepsy exhibit significant deficits in EF. Epilepsy Journey is a web-based problem-solving intervention that improves executive functioning skills in youth with epilepsy. However, examining the impact of Epilepsy Journey on additional secondary outcomes, including emotional/behavioral functioning, health-related quality of life (HRQOL), and sleep, is also of interest and an aim of the current study.

Methods: Thirty-nine adolescents, ages 13 to 17, were recruited (Mage=15.3 ± 31.3; 56% female). To be eligible for the open trial, participants were required to have at least two subclinical (>1 SD) or one clinically-elevated subscale on the caregiver version of the Behavior Rating Inventory of Executive Function. The 12-week online program (Epilepsy Journey) consisted of 10 self-directed online modules and synchronous Skype sessions with a coach. Content was organized around a journey theme in which different "lands," or learning modules, targeted EF domains in the context of a problem-solving framework. Participants and their caregivers completed the following questionnaires of interest from pre- to post-intervention to 2 and 5-month follow-up: Behavior Assessment Schedule for Children (BASC), PedsQL Epilepsy Module (HRQOL measure), and The Children's Report of Sleep Patterns.

Results: Significant improvements were reported on the parent-reported BASC Externalizing symptoms ($b=-6.13$, $p<0.01$), Behavioral Symptom Index ($b=-6.23$, $p<0.01$), and Adaptive Skills ($b=4.65$, $p<0.01$). No significant improvements were noted on the adolescent-reported BASC. For HRQOL, parent-reported Mood/Behavior Scale ($b=9.91$, $p<0.05$) and adolescent-reported Epilepsy Impact ($b=10.17$, $p<0.01$), Cognitive functioning ($b=3.95$, $p<0.001$), Executive functioning ($b=4.15$, $p<0.001$), and Sleep ($b=14.74$, $p<0.05$) subscales improved significantly over time. Finally, significant improvements were noted for several sleep scales, including parent-reported bedtime fears/worries ($b=-1.32$, $p<0.01$) and sleep location index ($b=-0.48$, $p<0.001$) and adolescent-reported sleep location index ($b=-0.34$, $p<0.05$), restless legs symptoms ($b=-1.49$, $p<0.05$), parasomnia symptoms ($b=-0.18$, $p<0.05$), and sleep indicator items ($b=-0.19$, $p<0.05$).

Conclusions: Findings suggest that Epilepsy Journey can lead to improvements in key secondary outcomes, including parent-reported behavioral and emotional functioning, parent and adolescent-reported HRQOL, and sleep patterns. An important next step is to test Epilepsy Journey in a robust Phase 3 trial.

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CITATION AWARD WINNER

Paper Session 45

3:45 PM-4:00 PM

IMPACT OF NEIGHBORHOOD FOOD ENVIRONMENT ON DIETARY AND WEIGHT CHANGE AMONG CHILDREN IN WEIGHT CONTROL TREATMENT

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Introduction: Some cross-sectional studies link neighborhood food environment with child weight, but whether neighborhood food environment influences weight control efforts in children is under-studied.

Method: Parent-child dyads ($n=106$; child demographics: mean age=9.4 ± 1.3y; 68% female; 67% white; mean percent over median body mass index for age and sex [%OW]=61.6 ± 24.8 [baseline] and 49.7 ± 25.4 [month 4]) completed 4 months of family-based behavioral obesity treatment (FBT) and were subsequently randomized to one of three 8-month weight control conditions: social facilitation high dose (SFM+ HIGH), social facilitation low dose (SFM+ LOW), or an educational control (CONTROL). Anthropometric and dietary assessments were completed pre-FBT (month 0), post-FBT (month 4), and post-maintenance intervention (month 12). The neighborhood food environment around each dyad's residence was characterized once at baseline and operationalized through a geographic information system as counts of different types of food stores within a 1-mile radius. Store types included general/convenience stores, quick service food chains and non-chains, grocery stores, supermarkets, and restaurants. Diet quality was operationalized using healthy eating index 2015 (HEI) scores from three 24-hour dietary recalls. Hierarchical linear regression was used to examine if maintenance condition moderated the relationship between the neighborhood food environment and month 12 child outcomes, controlling for child age, household socioeconomic status, and month 4 %OW and HEI score.

Results: Across conditions, having more nearby general/convenience stores significantly predicted greater increases in %OW ($B=-.418$, $SE=.18$, $p=.031$). Condition moderated the relationship between the number of nearby non-chain quick service food outlets (e.g., local sub shop) and child's diet quality at 12 months, such that more non-chain quick service food outlets was related to poorer diet quality among children in CONTROL ($B=-1.69$, $SE=.68$, $p=.016$), but not among children in the more active SFM+ HIGH or LOW. Condition did not significantly moderate the relationship between counts of other types of food outlets and child diet quality or weight change.

Conclusion: SFM, which helps families navigate socio-environmental contexts, including macro environments, buffers against the negative effects of some unhealthy food service outlets to promote diet quality during weight control, although convenience/general stores may prove particularly detrimental to weight loss maintenance, even with more intense intervention.

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Paper Session 45

4:00 PM-4:15 PM

MATERNAL DEPRESSIVE SYMPTOMS, PARENTAL INVOLVEMENT AND TYPE 1 DIABETES MANAGEMENT DURING LATE ADOLESCENCE

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Late adolescence is challenging for type 1 diabetes (T1D) management as parental involvement declines, and young people manage a complex illness more independently from parents. Yet, parents remain a trusted resource during late adolescence, and parental involvement predicts T1D outcomes well into emerging adulthood. Mothers' depressive symptoms have been found to undermine her ability to be an effective caregiver for early adolescents with T1D. We examined whether maternal depressive symptoms also pose risks for T1D management during late adolescence. Seniors in high school ($N = 192$; 63% female; 87% non-Latino White) completed surveys reporting on mothers' and fathers' involvement in T1D management, self-management behaviors and depressive symptoms, and an assay kit to measure HbA1c. Mothers completed surveys to indicate levels of depressive symptoms. Mothers reported high levels of depressive symptoms with 22% above the CESD cutoff of 16 and 13% above the more conservative cutoff of 21. Mothers' depressive symptoms were correlated with teens' reports of lower self-management ($r = -.262, p = .001$) and higher depressive symptoms ($r = .186, p = .008$), but were unrelated to HbA1c. Although maternal depressive symptoms were generally unrelated to maternal and paternal involvement, teens reported being more likely to keep secrets about T1D management from mothers when mothers were more depressed ($r = .145, p = .040$) and keeping secrets was associated with higher (poorer) HbA1c ($r = .198, p = .002$). Multiple regressions revealed that some aspects of maternal involvement were less associated with T1D management when mothers reported more depressive symptoms. For example, maternal depressive symptoms moderated the association of mothers' knowledge of her adolescent's T1D management with HbA1c, indicating knowledge was associated with better HbA1c only when mothers were less depressed ($B = -.032, p = .032$). Findings also revealed teens are more likely to turn to and benefit from fathers' involvement when mothers were more depressed. For example, mothers' depressive symptoms moderated associations between relationship quality with fathers and HbA1c ($B = -.029, p = .023$), and between keeping diabetes-related secrets from fathers and HbA1c ($B = .029, p = .007$). In each case, positive aspects of fathers' involvement were associated with better T1D management when mothers were more depressed. Taken together, these findings demonstrate the importance of maternal depressive symptoms in the dynamics of family management of T1D during late adolescence.

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Paper Session 45

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ADVERSE CHILDHOOD EXPERIENCES AND HEALTH PROMOTING BEHAVIORS AMONG YOUNG ADULTS: ANOTHER PERSPECTIVE ON TRAUMA AND HEALTH

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Background: A robust literature has demonstrated a strong, graded relationship between exposure to childhood abuse and household dysfunction with negative health outcomes throughout the lifespan. Considerably less research has examined the relationship between adverse childhood experiences (ACE) with positive health behaviors, a gap filled by the present study.

Methods: During 2017-2018, a general health questionnaire that included items on ACE was administered to young adults (ages 18-29) at universities in California ($n=3,862$) and Texas ($n=451$). Seven categories of ACE were included: psychological, physical, or sexual abuse; violence between parents; and living with household members who were substance misusers, mentally ill, or ever imprisoned. Protective and preventive health behaviors in young adulthood were regressed on the number of endorsed items (range: 0-7), categorized as 0 (referent), 1, 2, 3, 4, or more ACE, using logistic regression controlling for age, gender, race/ethnicity, and site.

Results: Approximately 41.9% of the sample reported ACE exposure with a significantly higher rate among Texas participants ($p < 0.001$). The seven ACE were strongly interrelated ($p < 0.001$) and tended to cluster. ACE exposed participants were as likely to be interested in receiving physical and mental health information as non-ACE exposed participants, but consistently and significantly less likely to receive health information from their university (p 's < 0.01). There was no dose-response relationships between cumulative ACE and protective health behaviors (seatbelt/helmet use, condom use, or daily fruit/vegetable intake) though participants reporting higher ACE levels had greater odds of compromised health promoting behaviors. There was a graded relationship between ACE exposure and increased odds of ever being tested for HIV, but this pattern did not show up for other preventive health behaviors including self-exams or sunscreen use. Among alcohol users, reporting more ACE was related to decreased use of certain protective behavioral strategies (e.g., pacing drinks, having a friend let you know when you've had enough).

Conclusions: This study contributes to extant literature on ACE and health by demonstrating the impact of ACE on health education, protective health behaviors, and preventive health behaviors. Interventions to improve health promotion activities in ACE exposed populations can improve quantity and quality of life for this vulnerable population.

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Paper Session 45

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RECONSIDERING MEDIA USE AND SUICIDE: GENDER AND RACIAL/ETHNIC DISPARITIES IN THE 10-YEAR TRENDS AMONG A NATIONAL SAMPLE

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Background: Suicide is the second leading cause of death for adolescents. Recent studies increasingly showed significant associations between high media use and adolescent suicidal behaviors. Yet, results have been inconsistent and based on short-period cross-sectional designs. While girls were suggested to be more susceptible to social media, little is known about differences by gender and race/ethnicity in the link between long-duration media use and trends in suicidal behaviors over time. Such information is imperative to inform tailored suicide intervention targeting at-risk adolescents using media excessively. This study aims to examine gender and racial/ethnic disparities in associations between high media use and trends of adolescent suicidal behaviors.

Methods: A nationally representative sample of 147,929 students in grades 9-12 (50.5% female) was derived from the 1999-2017 National Youth Risk Behavior Survey, a school-based survey conducted biannually. High media use were two dichotomized variables measuring whether students had over 3 hours/day of 1) watching TV and 2) using computers for non-school work (e.g., videogames, YouTube, Instagram, Facebook). Suicidal behaviors (ideation, plan, attempts, injury by attempts) were self-reported. Logistic regression analyses were used to examine associations between high media use and trends of each suicidal behaviors by sex and racial/ethnic groups, adjusting for grade levels. Linear and quadratic trends were examined.

Results: Male adolescents with high media use were associated with different changes in suicidal behaviors by race/ethnicity. High TV use was associated with increasing trends of injury by attempts among Hispanic (OR=1.69, $p < .05$) and other-race (OR=3.28, $p < .05$) males. Black males with high internet and social media use showed an increasing trend of suicide plan (OR=1.42, $p < .05$). However, high internet use was associated with decreasing trend of suicidal ideation among Asian male (OR=0.60, $p < .05$) with faster rates in the later period ($p < .05$), suicide attempts (OR=0.65, $p < .05$) and injury by attempts (OR=0.66, $p < .05$) among White males. No significant results were revealed among females.

Conclusions: Only male adolescents with high media use showed significant associations with trends in suicidal behaviors in the past 10 years. Racial/ethnic disparities among male subgroups were uncovered. Black males with high computer use and Hispanic and other-race adolescents watching TV for more than 3 hours showed higher risks in suicide trends. Health practitioners are suggested to screen different types of high media use to detect at-risk adolescents from different racial/ethnic background. Suicide interventions incorporating media use may be effective. Future investigation is needed to explain mechanisms associated with racial/ethnic disparities in the effects of media use on trends of suicide.

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CITATION AND MERITORIOUS AWARD WINNER
Paper Session 46 3:30 PM-3:45 PM

LONG-TERM IMPACT OF ADOLESCENT CHRONIC PAIN ON YOUNG ADULT EDUCATIONAL, VOCATIONAL, AND SOCIAL OUTCOMES

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Introduction: Chronic pain often begins in adolescence and results in negative consequences including missed school, withdrawal from social activities, and over-dependency on parents. While research has advanced understanding of the initial impact of chronic pain during childhood, surprisingly little is known about its long-term consequences as youth transition to adulthood. This is the first nationally representative study to characterize the impact of chronic pain in adolescence on key educational, vocational, and social outcomes in young adulthood (12 years later).

Methods: Data from the National Longitudinal Study of Adolescent to Adult Health was used, including 3,174 youth with chronic pain and 11,610 without chronic pain who completed Wave I at ages 11-17 (adolescence) and Wave IV at ages 24-32 (young adulthood). We conducted multivariate regression analyses to examine the main effect of adolescent chronic pain status (Wave I) in predicting young adult educational, vocational, and social outcomes (Wave IV) while controlling for sociodemographic variables (i.e., Wave I sex, race/ethnicity, and parent income and Wave IV age) and adolescent depressive symptoms.

Results: Adolescent chronic pain was associated with decreased odds of attaining a high school diploma (OR = 0.66, 95% CI: 0.57 – 0.82) and attaining a bachelor's degree (OR = 0.83, 95% CI: 0.71 – 0.96) in young adulthood. Adolescent chronic pain was also associated with decreased odds of receiving employer-provided insurance benefits (OR = 0.80, 95% CI: 0.68, 0.92) and increased odds of receiving public assistance (OR = 1.31, 95% CI: 1.16, 1.48). Finally, adolescent chronic pain was associated with earlier pregnancy/increased rate of having biological children (OR = 1.28, 95% CI: 1.13, 1.45) as well as lower romantic relationship quality ($b = -0.08$, SE = .02) in young adulthood.

Conclusion: Chronic pain in adolescence is associated with risk for educational, vocational, and social impairments in young adulthood, indicative of socioeconomic disparities. Our findings contribute to the limited knowledge base of the scope of adverse long-term outcomes in young adults with a history of adolescent chronic pain, informing the need for more focused screening and intervention efforts. Increased research attention is needed to understand the life course impact of pediatric chronic pain, including early risk factors and underlying mechanisms that influence adverse outcomes.

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MERITORIOUS AWARD WINNER

Paper Session 46

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EXERCISE AND DIETARY RECOMMENDATIONS FOR WOMEN WITH CHRONIC PAIN: WHAT'S WEIGHT AND RACE GOT TO DO WITH IT?

Lauren E. Mehok, M.S.¹, Kaitlyn Walsh, B.S.², Megan M. Miller, PhD³, Adam T. Hirsh, PhD¹

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Although treatment guidelines indicate that providers should recommend exercise for chronic pain, there is variability in the types of exercises that are recommended. Emerging research also suggests that diet modifications improve pain; however, little is known about clinical practice patterns for this treatment. We have found that patient weight and race, analyzed separately, elicit different recommendations for various pain treatments, including lifestyle modifications. To better understand the nuances of these effects, the current study explored the impact of patient weight and race on recommendations for specific types of exercise and dietary change. Medical students (N=90; 60% female) viewed vignettes and videos of middle-aged women with chronic back pain performing a sit-to-stand task. Patient weight (overweight/obese) and race (Black/White) varied across videos. For each patient, participants rated how likely they were to recommend aerobic, strength, and flexibility exercises, as well as dietary changes. Repeated measures ANOVAs identified significant main effects of patient weight on recommendations for aerobic ($F(1,89)=29.85$, $p<.01$) and strength ($F(1,89)=6.08$, $p=.02$) exercise, such that patients with obesity were more likely to be recommended both. Results indicated a significant main effect of patient race on recommendations for flexibility exercise ($F(1,89)=4.92$, $p=.03$), such that White patients were more likely to receive this recommendation. Lastly, there was a significant weight-by-race interaction for dietary changes ($F(1,89)=40.53$, $p<.01$). Black patients with obesity were more likely to be recommended dietary changes than Black patients with overweight, but this effect was reversed for White patients. Although most patients with chronic pain would benefit from aerobic and strength exercise, patients with obesity may be perceived as deriving particular benefit (for both pain and weight management) and, thus, be more likely to elicit these recommendations. The race difference in flexibility recommendations mirrors findings that programs such as yoga are underutilized by racial/ethnic minorities. Finally, although speculative, the dietary finding may be driven by perceptions of race differences in receptivity to diet and weight loss advice. Future studies are needed to identify the mechanisms underlying these weight and race effects so that all patients with chronic pain may benefit from evidence-based multidisciplinary care.

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Paper Session 46

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DISABILITY IN PEOPLE WITH CHRONIC SPINAL PAIN IS MORE STRONGLY ASSOCIATED WITH PAIN BEHAVIOR THAN PHYSICAL PERFORMANCE

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Objective: Disability is a highly contextual and broad dimension for people with chronic low back pain (CLBP) predominantly assessed through patient-reported outcome measures. Few studies have examined the patient's perception and physical capacity. The primary aim was to determine correlates between body function and activity limitations from a patient's perspective with sensory-motor performance. The secondary aim was to investigate the association between pain beliefs and behaviors with disability outcomes.

Design, participants, and setting: An observational, cross-sectional study of 328 people with CLBP, recruited from an academic medical center (Stanford, CA) as part of a three-armed randomized control trial of mind-body therapies.

Methods: We collected patient-reported outcomes (PROs) and sensory-motor performance and sensitivity measures using a global and local (lumbar region) physical performance test battery. PROs included disability (Roland Morris Disability Questionnaire), physical health (PROMIS® Physical Function, Pain Interference, and Pain Behavior), mental health (PROMIS® Anxiety and Depression), and pain beliefs (Fear-Avoidance Beliefs Questionnaire, Pain Catastrophizing, Chronic Pain Acceptance Questionnaire). The 4-component physical performance test battery included an assessment of 1) Walking speed and endurance (Ten-meter walk, Two-minute walk); 2) Global balance and functional lower extremity strength (Single-limb stand, Five times sit-to-stand tests); 3) Lumbar flexibility (Forward bend test) and extensor endurance (Ito test); and 4) Lumbar two-point sensory discrimination (2PD_{Lumb}), and pressure-pain threshold (PPT_{Lumb}). Locally-weighted polynomial regression, principal component analysis, and Pearson correlations visualized through heat-maps were used to assess the relationship between body function and activity limitations from a patient's perspective (PROs) with sensory-motor performance recorded by the clinician (Aim 1). Pearson correlations visualized through heat-maps were used to assess the relationship between pain behaviors and beliefs (Aim 2).

Results: A moderate relationship emerged between patient-reported physical function ($r=0.28$), disability ($r=-0.27$), pain behavior ($r=-0.27$), and pain interference ($r=-0.23$) with clinician-measured walking speed and endurance, and lower extremity strength. A strong relationship emerged between disability and pain behavior ($r=0.53$).

Conclusions: External manifestations of back pain as expressed through PROMIS® Pain Behavior elucidated body function and activity limitation more strongly than a physical and sensory-motor performance test battery.

Clinical Relevance: The patient's communication of their experience with pain and movement may help to provide a deeper context to the broad dimension of disability in people living with CLBP.

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Paper Session 46

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PERCEIVED RACIAL/ETHNIC DISCRIMINATION AND CONDITIONED PAIN MODULATION IN AFRICAN AMERICAN ADULTS

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Background: African Americans (AA) report higher pain severity and disability compared to Non-Hispanic Whites with similar pain conditions. Racial differences in exposure to stressful and traumatic life events may account, in part, for such disparities. Perceived racial/ethnic discrimination is associated with greater daily pain complaints and lower pain tolerance. The present study sought to address one important gap in this literature: is discrimination associated with conditioned pain modulation (CPM) after controlling for other types of stressors? CPM refers to changes in perceived pain intensity for a test stimulus during application of a conditioning stimulus. Impaired CPM has been implicated as a risk factor for chronic pain.

Methods: Participants were 62 pain-free AA (mean age = 27.2 years; 42 females) who completed a heat stimulation protocol and self-report measures on lifetime adversity. CPM was determined by changes in pain ratings (0 = “no pain” and 100 = “worst imaginable pain”) from a preconditioning phase (test stimulus = 30x30mm thermode) to a conditioning phase (conditioning stimulus = 46.5°C hot water bath). Weaker CPM (i.e. lesser reduction in pain ratings) is believed to reflect dysfunction of descending endogenous pain modulatory systems.

Results: Multilevel models examined within-person associations of adversity measures with changes in pain ratings from preconditioning to conditioning. Perceived discrimination ($b=3.35$, $SE=0.87$, $p<.001$) was associated with changes in pain ratings over and above the influence of age, sex, childhood trauma exposure, family adversity, acute and chronic stress levels. Simple slope analyses revealed that individuals reporting lower levels (-1 SD) of discrimination showed evidence of CPM ($b=-7.31$, $SE=3.60$, $p=.044$); in contrast, those reporting higher levels (+1 SD) of lifetime discrimination did not exhibit CPM.

Conclusion: Pain-free AA adults who reported greater lifetime racial/ethnic discrimination exhibited reduced CPM. These findings implicate discrimination as a risk factor for acute and chronic pain via reduced CPM. Importantly, discrimination was associated with reduced CPM even after controlling for the effects of other types of stressful and traumatic life events across the lifespan. Future research on the developmental and contextual features of stressors that alter pain sensitivity could help to address disparities in prevalence, severity and treatment of pain impacting AA adults.

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Paper Session 46

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FEELING AND BODY INVESTIGATORS: A RANDOMIZED CONTROLLED TRIAL OF A TREATMENT FOR YOUNG CHILDREN WITH FUNCTIONAL ABDOMINAL PAIN

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Persistent abdominal pain is one of the most frequent somatic symptoms among children, signaling increased vulnerability to anxiety, depression, and chronic pain symptoms. The term Functional Abdominal Pain – Not Otherwise Specified (FAP-NOS) is used for pain that cannot be entirely attributed to a disease process. No interventions for FAP-NOS have been developed specifically for young children, who are just learning to decode bodily sensations as signals of their needs and emotions. Prior interventions have successfully treated FAP-NOS by equipping parents with strategies for de-catastrophizing their child's pain. However, interventions focused on avoiding pain may be missing a key opportunity to help young children develop emotion awareness and regulation skills, a learning process particularly important in children at increased risk of developing anxiety and mood disorders. The Feeling and Body Investigators (FBI) intervention for FAP-NOS directly focuses on pain: using playful characters to learn about body sensations (e.g., Gassy Gus), using exposures to evoke uncomfortable sensations to discern how smart the body is, and mapping these sensations to interpretations and actions. In a randomized design, we compared FBI in 5- to 9-year-old children to the Caregivers in Action (CIA) intervention, the current standard of care. It was hypothesized that while both interventions would reduce pain, the FBI intervention would be more effective at improving emotion regulation. FBI resulted in a 68.7% reduction in pain frequency as assessed via interviews comparing 3-month pre-treatment with 3-month post-treatment. Reductions in pain intensity ($d = .59-.85$, child; $d = .65-.70$, parent report, $p < .05$); pain distress ($d = .85-1.05$, $p < .001$), and pain interference ($d = -.68$, $p = .001$) were statistically significant and of medium to large effect size. Two-way mixed-measures ANOVA revealed that FBI was as effective as CIA in reducing pain. In regard to negative affect, the analyses partially supported the hypotheses. FBI improved positive affect ($d = .49$, $p < .01$) and decreased negative affect ($d = -.62$ to $-.68$, $p < .01$). Improvement in emotion regulation was reported by 85% of parents in FBI, a frequency that approached significance relative to CIA ($\chi^2(2) = 5.8$, $p = .056$). Findings suggest that approaching pain and other sensations with playfulness and curiosity can help children be less fearful of their bodies while developing emotion awareness and regulation.

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Paper Session 47

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ASSOCIATIONS BETWEEN CHILDHOOD FOOD NEGLECT AND DSM-5 EATING DISORDERS IN A NATIONAL SAMPLE OF U.S. ADULTS

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Adverse childhood experiences (ACEs) have been associated with increased risk for eating disorders (EDs). It has also been suggested that restricted access to food, such as experiencing food insecurity, may increase risk for disordered-eating behaviors, such as binge eating. Childhood food neglect represents early experiences with restricted access to food and maltreatment. This study examined the relationship between childhood food neglect and *DSM-5*-defined EDs in a nationally representative sample of U.S. adults, with a particular focus on whether the relationship persists even after adjusting for other ACEs and family financial difficulties during childhood.

Methods: The study included respondents from the National Epidemiological Survey on Alcohol and Related Conditions III (NESARC-III) who answered a question regarding childhood food neglect ($n = 36,145$). First, the prevalence of lifetime anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED) was determined by a history of childhood food neglect. Analyses then compared the odds of each ED diagnosis after adjusting for sociodemographic characteristics (Model 1) and additionally adjusting for history of other ACEs and governmental support during childhood (Model 2).

Results: Prevalence estimates for AN, BN, and BED with a history of childhood food neglect were 2.80% ($SE = 0.81$), 0.60% ($SE = 0.21$), and 3.50% ($SE = 0.82$), respectively and 0.80% ($SE = 0.07$), 0.30% ($SE = 0.03$), and 0.80% ($SE = 0.05$) for those without a history (all significantly different at $p < .05$). In the fully-adjusted model, odds of having an eating-disorder diagnosis were significantly higher for AN (AOR = 2.98 [95% CI = 1.56–5.71]) and BED (AOR = 2.95 [95% CI = 1.73–5.03]) in respondents with history of childhood food neglect compared with those without the history; AORs were not significant for BN.

Discussion: The findings suggest that individuals with a history of childhood food neglect may be at significantly increased odds of meeting lifetime diagnoses of AN and BED and that these elevated rates persist after adjusting for other adverse experiences and financial difficulties during childhood. Thus, identifying and addressing food neglect during childhood may perhaps help to prevent the development of EDs.

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Paper Session 47

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LONGITUDINAL CHANGES IN DISORDERED EATING BEHAVIORS IN CHILDREN AND YOUNG ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Kelly A. Romano, M.S., Ed.S.¹, Kristin E. Heron, Ph.D.², Rachel A. Amerson, M.A.³, Lindsay Howard, M.S.⁴, Rachel I. MacIntyre, M.S.⁵, Tyler B. Mason, PhD⁶¹The Virginia Consortium Program in Clinical Psychology, Norfolk, VA; ²Old Dominion University, Norfolk, VA; ³The Virginia Consortium Program, Norfolk, VA; ⁴Virginia Consortium Program in Clinical Psychology, Newport News, VA; ⁵Virginia Consortium Program in Clinical Psychology, Norfolk, VA; ⁶University of Southern California, Los Angeles, CA

Purpose: Disordered eating behavior (DEB) is associated with physical and mental health concerns in both eating disorder (ED) and non-clinical (NC) samples. Past reviews and meta-analyses have examined longitudinal changes in global ED pathology, but none have assessed variations in the use of particular DEBs over extended periods. To address this gap, a meta-analysis was conducted to examine longitudinal changes in DEB use in ED and NC samples.

Method: Prospective studies assessing changes in DEBs via at least two assessments with a time lag of ≥ 10 years were included. Risk ratios (*RR*) were calculated for both baseline to 10-14.9-year and baseline to ≥ 15 -year follow-up changes in the use of binge eating, multiple purging, self-induced vomiting, laxatives, diuretics, diet pills, compensatory exercising, fasting/dieting, and multiple DEBs. Subgroup analyses tested whether ED vs. NC samples and female vs. male sex/gender influence overall effect magnitude for analyses with sufficient data.

Results: In total, 17 studies (44 articles; 26 unique [sub]samples) were included that provided data for 31 to 9,031 participants per sample (baseline *M*age=18.63, *SD*=5.49; range=11.59–29.30). There were nine ED and 17 NC (sub)samples. Over 10-year follow-up, significant decreases were found in the use of vomiting ($RR=0.60$), laxatives ($RR=0.66$), compensatory exercising ($RR=0.80$), and fasting/dieting ($RR=0.60$). Over 15+ year follow-up, significant decreases were found in the use of laxatives ($RR=0.37$), diuretics ($RR=0.42$), diet pills ($RR=0.25$), and compensatory exercising (0.75). ED vs. NC status moderated 10-year changes in binge eating (ED: $RR=0.53$; NC: $RR=0.99$), multiple purging (ED: $RR=0.55$; NC: $RR=2.09$), and laxatives use (ED: $RR=0.34$; NC: $RR=1.30$). Sex/gender did not moderate changes in DEB use.

Conclusions: The present results suggest changes in DEB use vary based on DEB type and whether participants comprise clinical ED or NC samples. Use of purging DEBs generally decreased over time across all studies. Moderation analyses showed that NC samples had increases in the use of multiple purging and laxatives whereas ED samples' use decreased. Also, binge eating only decreased in ED samples. Increased clinical attention should be given to DEB prevention in NC populations to preclude the development of clinical EDs, and potential physiological (e.g., cardiovascular, gastrointestinal, neurobiological) and psychological morbidity associated with long-term DEB use.

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Paper Session 47

4:00 PM-4:15 PM

WEIGHT BIAS INTERNALIZATION MEDIATES THE RELATIONSHIP BETWEEN FOOD ADDICTION AND OVERVALUATION OF SHAPE AND WEIGHT

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Introduction: Food addiction, a form of disordered eating posited to occur in the presence of highly palatable foods and resembling behaviors common in substance use and other behavioral addictions, is associated with obesity and binge-eating disorder (BED). BED is associated with weight bias internalization (WBI) and body-image concerns including the overvaluation of shape and weight. Although overvaluation of shape and weight and WBI are associated with BED, the relationship between food addiction, overvaluation of shape and weight, and WBI is yet to be explored. The current study examined the mediating effect of WBI on the relationship between overvaluation of shape and weight and food addiction in BED patients.

Methods: Participants included 246 treatment-seeking adults with obesity who met *DSM-IV-TR* criteria for BED. Overvaluation of shape and weight were assessed using both the Eating Disorder Examination (i.e., semi-structured interview) and the Eating Disorder Examination Questionnaire (i.e., self-report measure). Food addiction was assessed with the Yale Food Addiction Scale and WBI was assessed using the Weight Bias Internalization Scale.

Results: Results from the correlation analysis indicated that WBI was positively and significantly related to overvaluation of shape and weight and food addiction (all p 's < .001). Results from the mediation analyses indicated that WBI fully mediated the relationship between overvaluation of shape and food addiction (self-reported: 95% CI = .08-.24; interview: 95% CI = .09-.23) and overvaluation of weight and food addiction (self-reported: 95% CI = .10-.26; interview: 95% CI = .07-.18).

Discussion: This is the first study to examine the mediating effect of WBI on the relationship between overvaluation of shape and weight and food addiction in adults with BED. Findings suggest that overvaluation of shape and weight and WBI are important correlates of food addiction in this patient group with BED with comorbid obesity. Specifically, participants with BED who report high levels of overvaluation of shape and weight are more likely to perceive themselves as addicted to food because of the statistically-mediating influence of WBI. The findings should be tested in prospective repeated-measures longitudinal designs and using experimental methods; if replicated, findings could ultimately inform treatment refinement.

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Paper Session 47

4:15 PM-4:30 PM

GUT HYPERVIGILANCE IN ANOREXIA NERVOSA: IMPLICATIONS FOR TREATMENT

Alannah Rivera-Cancel, BA¹, Julia Nicholas, BS¹, Samuel Marsan, BA¹, Beate M. Herbert, Associate Professor², Cynthia Bulik, PhD³, Katharine L. Loeb, PhD⁴, Nancy Zucker, PhD¹¹Duke University, Durham, NC; ²University of Tuebingen, Ulm, Baden-Wuerttemberg, Germany; ³University of North Carolina at Chapel Hill, Chapel Hill, NC; ⁴Fairleigh Dickinson University, Teaneck, NJ

Introduction: Gastrointestinal symptoms are common during the acute phase of anorexia nervosa (AN), challenge treatment retention, and often persist after recovery. These symptoms are typically seen as normative and expected sequelae of malnutrition and re-nourishment and thus not systematically addressed in treatment. Yet, aversive visceral experiences may impair the process of re-nourishment and contribute to potent visceral memories that increase preoccupation with the gut and the risk of relapse. We explore emotional reactions and preoccupation to gut sensations, body sensations that constitute anxious arousal, and eating disorder symptoms in adolescents with AN or a history of AN relative to healthy controls (HC) and in their mothers. We hypothesized that gut sensations, specifically, rather than somatic symptoms generally, would be elevated in individuals with AN and their mothers—suggesting gut hypervigilance as a vulnerability factor that may be exacerbated by the starvation of AN.

Methods: Twenty-two female adolescents with AN or a history of AN and 31 healthy female adolescents completed online questionnaires including the Visceral Sensitivity Index (VSI), the Childhood Anxiety Sensitivity Index (CASI), and the Eating Disorder Inventory-3 Drive for Thinness and Body Dissatisfaction subscales. The parents of both groups of participants also completed an online battery that included the VSI and the Anxiety Sensitivity Index (ASI). Independent samples t -tests were used to assess differences between groups. Parents of AN and HC adolescents were matched based on child age, and paired sample t -tests with 16 pairs of parents were used to compare parents' VSI and ASI.

Results: Independent samples t -tests revealed significantly higher VSI in AN relative to HC ($M_{AN} = 39.00$, $SD_{AN} = 14.18$, $M_{HC} = 26.9$, $SD_{HC} = 8.8$, $t = 3.6$, $p = .001$, $d = 1.1$) and no significant differences in CASI ($t = .25$, $p = .8$, $d = .08$). VSI, but not ASI, was significantly correlated with body dissatisfaction ($r = .62$, $p < .01$) and drive for thinness ($r = .64$, $p < .01$). VSI was positively correlated with age of onset ($r = .45$, $p < .05$). Paired sample t -tests found no statistically significant differences in VSI ($t = 1.48$, $p = .16$, $d = .54$) or ASI ($t = -1.38$, $p = .19$, $d = -.50$) between AN-parents and HC-parents, though effect sizes were medium.

Conclusions: When individuals have had painful and/or uncomfortable visceral sensations, vulnerable individuals may become hypervigilant to body experiences in an attempt to avoid future aversive sensations. In AN, the task of renourishment is painful and uncomfortable. In a condition already marked by body preoccupation, the challenge of renourishment may worsen this preoccupation. There is an urgent need to develop strategies for renourishment that minimize this discomfort, a focus that may improve outcomes and help lessen risk for relapse.

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Paper Session 47

4:30 PM-4:45 PM

AN INITIAL TEST OF FEASIBILITY, ACCEPTABILITY, AND EFFICACY OF A VIRTUAL REALITY INHIBITORY CONTROL TRAINING FOR BINGE EATING

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Treatments for binge eating (a key problematic behavior across eating disorders and obesity) have suboptimal outcomes. One reason for suboptimal outcomes is that treatments do not sufficiently address deficits in inhibitory control (i.e., the ability to withhold a prepotent response), which are known to maintain binge eating. Enhancing inhibitory control through computerized inhibitory control trainings (ICTs) has the potential to reduce binge eating and be highly disseminable, but the literature is mixed as to whether ICTs can produce real-world behavioral changes. A virtual reality (VR)-based ICT has the potential to yield improved outcomes over traditional computer-based ICTs due to (1) more realistic imagery of foods encountered in everyday life; and (2) realistic motor movements (e.g., reaching for food versus a keypress). Additionally, recent technological advancements allow for regular at-home use of a VR ICT, increasing disseminability and the potential for repeated practice. As such, we developed the first-ever VR ICT for reducing binge eating (*TakeControlVR*) and evaluated its feasibility, acceptability, and initial efficacy. We recruited participants with clinically significant binge eating ($n=13$) to complete a daily VR ICT in their own homes for two weeks. Binge eating was measured at pre-treatment, post-treatment, and after a 2-week follow-up period. A subset of participants ($n=7$) completed a 4-week waitlist baseline period prior to the training period. On a 5-point Likert scale, participants rated *TakeControlVR* as easy to use ($M=4.23\pm.83$) and fun ($M=4.23\pm.93$). Participants also reported that they looked forward to using it ($M=4.15\pm.99$), and that completing trainings became part of their daily routine ($M=4.31\pm 1.61$). Mean compliance with daily trainings was 85.7%. Moreover, *TakeControlVR* resulted in an 81.1% decrease in binge episodes from pre-treatment to follow-up ($M_{pre}=10.17\pm 2.21$, $M_{post}=1.92\pm.90$), compared to the waitlist control period, during which binge eating decreased 34.8% ($M_{pre}=13.50\pm 5.4$, $M_{post}=8.8\pm 2.96$). Results indicate that a daily, at-home virtual reality ICT can be feasible, acceptable and result in reductions in binge eating. Future research should examine whether (1) VR ICTs are feasible, acceptable, and efficacious over a longer training period, (2) whether VR ICTs show relative efficacy over and above computerized non-VR trainings, and (3) whether VR ICTs add incremental value as an adjunct to standard treatments.

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Paper Session 48

3:30 PM-3:45 PM

PILOT TRIAL OF COGNITIVE BEHAVIORAL THERAPY INTERVENTION TO IMPROVE CONTRACEPTION USE IN WOMEN AT RISK FOR UNINTENDED PREGNANCY

Stephen J. Lepore, PhD¹, Collins N. Bradley, PhD¹, David W. Sosnowski, PhD², Melissa Godfrey, MPH¹¹Temple University, Philadelphia, PA; ²Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD

Over one-half of pregnancies are unintended (UP) and UP has been linked to poorer maternal and child health. UP risk is greatest in low-income and minority women, particularly if they suffer from depression and low self-esteem. We tested an innovative behavioral intervention aimed at lowering risk for UP via improved contraception use in high-risk women. The intervention consisted of telebased, peer-led contraception education and cognitive behavioral therapy (CBT). There is evidence that using peers in the delivery of CBT is acceptable and beneficial among low-income and minority women. Eligibility included: not sterilized; not pregnant or planning to be; sexual intercourse past 3 months; inconsistent or no birth control; 18-45 years old, own smartphone, and have elevated depressive symptoms. Baseline data were collected before women ($N = 133$) were randomized to Intervention or a treatment as usual control group. The intervention included 8 telephone sessions with a peer specialist, a mobile app to monitor mood and activities, and a workbook. Data were collected via telephone interviews pre-intervention and at 4-, 10-, and 14-week follow-ups. The main outcomes at 14-weeks were consistent birth control use, distress symptoms and self-esteem. Mediators included sexual/contraceptive self-efficacy, coping, and mattering to others at 10-weeks. Missing data were handled using multivariate imputation by chained equations. Contraception consistency was only analyzed in women having intercourse with a male partner at 14-week follow-up. Participants were mostly (82.0%) non-White; 60.2% lived in poverty; 51.1% had history of UP. Participants completed a median of 6 phone sessions; 88.7% rated the CBT workbooks as somewhat or very helpful; 81.5% rated the Daylio app as somewhat or very helpful. Results suggested that being in the CBT group may have increased the odds of consistently using contraception relative to controls: odds ratio = 1.98 (95% CI = .86 – 4.54), $p = .05$. Sensitivity analyses using original data were similar: odds ratio = 2.28 (95% CI = 1.01-5.27), $p = .02$. There was no statistically significant effect of the intervention on distress symptoms or self-esteem at 14-weeks. Among the mediators, there was a significant positive effect of intervention on 10-week sense of mattering to others ($p < .05$ imputed and original data), but this was unrelated to subsequent contraception use. In sum, using peer specialists to deliver CBT targeting psychological risk factors to improve contraception use is theoretically compelling, but as an innovation it is risky. Women in the intervention appeared to have improved contraception use but may need treatments that are more intensive to realize improved psychological functioning (e.g., more homework, more sessions). Given the generally high adherence to and positive ratings of treatment, more intensive treatment may be feasible.

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MERITORIOUS AWARD WINNER**Paper Session 48****3:45 PM-4:00 PM****MILITARY SEXUAL TRAUMA HISTORY AND IMPAIRED ROMANTIC RELATIONSHIP FUNCTIONING AMONG US ARMY RESERVE/NATIONAL GUARD SOLDIERS**Jennifer Fillo, Ph.D.¹, D. Lynn Homish, M.S.², Gregory Homish, Ph.D.²¹University at Buffalo, The State University of New York, BUFFALO, NY;²University at Buffalo, The State University of New York, Buffalo, NY

There has been growing attention to the alarming prevalence of military sexual trauma (MST) in the US Military, as well as its physical, mental, and behavioral health consequences. However, far less attention has been paid to the toll MST can take on service members' romantic relationships. In the civilian literature, sexual trauma history is directly linked to impaired relationship functioning. Undermining these relationships may be especially harmful in military populations because partners are a critical source of support, often playing a vital role in aiding recovery from service-connected conditions. To shed light on this important issue, this research examined relations between MST history and multiple indicators of current romantic relationship functioning among male and female service members and veterans. Data were drawn ($N = 356$) from Operation: SAFETY, an ongoing longitudinal study examining health and well-being among U.S. Army Reserve and National Guard soldiers and their partners. OLS regression analyses examined associations between participants' MST history and multiple indicators of current romantic relationship functioning (i.e., marital satisfaction, intimacy, negative social exchange), as well as potential differences by sex. MST history predicted lower current romantic relationship satisfaction ($b = -9.44, p = .012$). MST history also predicted lower emotional intimacy ($b = -1.46, p = .027$) and recreational intimacy ($b = -1.11, p = .038$), but was unrelated to sexual intimacy ($b = -0.08, p = .253$). Interactions with participant sex revealed that the detrimental effect of MST history on social intimacy was greater for females than males, and the effect of MST history on intellectual intimacy only held for females. Further, MST history predicted more negative social exchange in current romantic relationships (total score: $b = 3.95, p = .010$). Specifically, those with a history of MST reported greater insensitivity ($b = 1.34, p = .020$) and interference ($b = 1.04, p = .004$) in their relationships. Results revealed that the consequences of MST extend beyond service members to also impair functioning in their romantic relationships. Soldiers with MST history were less satisfied, had lower intimacy, and had greater negative social exchange in their current romantic relationships. Findings demonstrate the far-reaching consequences of MST and underscore the need for interventions aimed at preserving this important source of support for service members.

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Paper Session 48**4:00 PM-4:15 PM****"HIV MADE ME STRONGER:" CONCEPTIONS OF SUCCESSFUL AGING AMONG OLDER WOMEN LIVING WITH HIV**Anna A. Rubtsova, PhD¹, Tonya N. Taylor, PhD², Gina Wingood, ScD³, Deborah Gustafson, PhD⁴, Marcia Holstad, PhD, FNP-BC, FAANP, FAAN⁵

¹Emory University Rollins School of Public Health, Atlanta, GA; ²SUNY Downstate Medical Center, Brooklyn, NY; ³Columbia University Mailman School of Public Health, New York, NY; ⁴State University of New York Downstate Medical Center, Brooklyn, NY; ⁵Nell Hodgson Woodruff School of Nursing at Emory University, Atlanta, GA

Older (age 50+) women living with HIV (OWLH) face multiple challenges related to the intersection of HIV infection and aging, e.g. multimorbidity and polypharmacy, as well as HIV- and gender-related stigma and discrimination. However, in our previous quantitative study we found a high prevalence of self-rated Successful Aging (SA) among OWLH enrolled in the Women's Interagency HIV Study (WIHS). In the sample of 386 OWLH, 84% rated their SA to be 7 or higher on a scale from "1" (least successful) to "10" (most successful). Little is known about what accounts for this high prevalence and exactly how OWLH understand SA. To date, several studies examined SA among predominantly white male HIV-seropositive adults but not among OWLH. Therefore, the purpose of this qualitative study was to examine subjective understandings of SA among OWLH. The study used purposive sampling to recruit OWLH enrolled in WIHS and, as a comparison group, OWLH who were not enrolled in WIHS but received clinical care. The sample for these analyses included 19 OWLH who participated in semi-structured interviews - 10 in Atlanta, GA (3 WIHS and 7 non-WIHS) and 9 in Brooklyn, NY (5 WIHS and 4 non-WIHS). The interviews were conducted between October 2018 and March 2019 and ranged from 30 to 120 minutes. Transcribed interviews were analyzed using qualitative content analysis methodology within the grounded theory approach. Several themes emerged in participants' definitions of SA, such as self-care, taking HIV medications, and being resilient ("HIV made me stronger"). Both WIHS and non-WIHS participants emphasized life course perspective in their definitions of SA, i.e. women viewed their aging successful as a more stable phase of life in contrast to hardships they experienced while being younger (e.g., drug use, incarceration). Taking together with our earlier quantitative findings, these results suggest that SA is achievable among OWLH. Interventions enhancing resilience should be considered to promote SA in OWLH.

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Paper Session 48

4:15 PM-4:30 PM

WHAT ARE BREAST CANCER PATIENTS' BELIEFS ABOUT DISCUSSING SEXUAL HEALTH WITH THEIR PROVIDERS?

Lauren A. Zimmaro, PhD¹, Mary Catherine Beach, MD, MPH², Stephen J. Lepore, PhD³, Jennifer B. Reese, PhD⁴¹Fox Chase Cancer Center, Harleysville, PA; ²Johns Hopkins School of Medicine, Baltimore, MD; ³Temple University, Philadelphia, PA; ⁴Fox Chase Cancer Center, Philadelphia, PA

Objectives: Women with breast cancer (BC) experience sexual concerns and often avoid discussing them with their healthcare providers (HCP). Little quantitative research has investigated the beliefs BC patients hold in relation to discussing sexual issues. We aimed to (1) characterize the beliefs patients report regarding discussing sexual concerns with HCP, (2) categorize patients according to the extent to which they report certain beliefs, and (3) compare these patient groups on communication self-efficacy and sexual concerns.

Methods: 141 BC patients (M age=56, 33% minority) provided baseline self-report data as part of a sexual health communication intervention trial. Standard measures assessed beliefs about sexual health communication that could interfere with women's likelihood of discussing such issues (e.g., "I might become embarrassed;" "I worry about offending my provider"), self-efficacy for clinical communication about sexual concerns, and level of sexual concerns. Exploratory factor analysis identified underlying types of beliefs. Hierarchical cluster analysis detected groups of patients with similar response patterns based on the factors. Chi-square tests and ANOVAs compared patient groups on level of sexual concerns and communication self-efficacy.

Results: Two factors within the communication belief items emerged: (1) items reflecting *patients' own beliefs about or perceived inability* to discuss sexual concerns (self-beliefs; e.g. "I wouldn't know where to start"), and (2) items reflecting *patients' perceptions of providers' feelings* that might limit discussing sexual concerns (provider-beliefs; e.g. "My provider might become embarrassed"). Patients endorsed self-beliefs to a greater extent than provider-beliefs (M=2.5 vs. 2.0, range 1-5), $t(143)=7.86$, $p<.001$. Three patient clusters emerged: (1) high self/high provider-beliefs (high/high; $n=19$; 13%), (2) high self/low provider-beliefs (high/low; $n=95$; 66%), and (3) low self/low provider-beliefs (low/low; $n=30$; 21%). The clusters differed from one another on sexual communication self-efficacy in the expected direction, $F(2)=10.57$, $p<.001$, with the high/high cluster having the lowest self-efficacy, followed by the high/low cluster, and then the low/low cluster. Mean sexual concerns were moderate ($M=4.7$, range 0-10) and did not differ among patient clusters ($p=.867$).

Conclusions: When asked about beliefs on sexual health clinical communication, BC patients most often and most highly endorsed beliefs reflecting their own level of confidence and comfort with discussing this topic, as opposed to their providers'. Next steps include assessing whether patient beliefs relate to actual clinical communication and whether interventions are effective at enhancing not only patients' their beliefs and skills but also their communication with providers.

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Paper Session 48

4:30 PM-4:45 PM

SEXUAL SATISFACTION AND SEXUAL AGENCY IS ASSOCIATED WITH WELL-BEING FOR WOMEN REGARDLESS OF AGE OR RELATIONSHIP STATUS

Christine M. Curley, M.A.; J.D.¹¹University of Connecticut, North Kingstown, RI

Health psychology has focused primarily on nutrition, exercise, and smoking cessation to improve wellness, largely failing to discuss the health benefits of sexual satisfaction. This study found a significant association between sexual satisfaction, relationship satisfaction, and sexual agency, and well-being for women of varying ages.

Studies have found a strong association between sexual satisfaction and overall well-being, but have not directly examined whether this differs for women of varying ages or depends upon relationship status. This study recruited women to examine: (1) that there will be an association between age, sexual agency, relationship satisfaction and sexual satisfaction; (2) that higher levels of sexual satisfaction will be associated with higher levels of overall well-being; (3) which factors are more strongly predictive of sexual satisfaction; and (4) the extent to which relationship status impacts the association between the variables examined.

Methods: The survey sample consisted of 347 women aged 18-76; ($M=34.29$; $SD=14.19$); 79.9 % White; and 63% heterosexual (of participants reporting their sexual orientation).

Participants answered a series of survey questions about their overall well-being, sexual satisfaction, sexual agency, relationship satisfaction, and sociosexual orientation using established validated measures, as well as demographic questions including relationship status and socioeconomic status.

Discussion: For all women, regardless of age, higher sexual satisfaction was correlated with higher overall well-being; this finding is important as it counters the misconception that sexual satisfaction matters less for women as they grow older.

Higher sexual agency scores were associated with higher sexual satisfaction scores. Particularly striking was the strength of the correlation between sexual agency and sexual satisfaction, and that sexual agency was a stronger predictor of sexual satisfaction than relationship satisfaction.

Regression analyses revealed that the strongest predictor of sexual satisfaction was sexual agency, followed by relationship satisfaction, with neither age nor sociosexual orientation being significant predictors.

Partial correlations indicated that relationship status does not alter the association (1) between age and overall well-being; (2) between sexual satisfaction and overall well-being; (3) between sexual agency and overall well-being; and (4) between sexual agency and sexual satisfaction.

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Paper Session 49

3:30 PM-3:45 PM

AN OBSERVATIONAL ASSESSMENT OF THE SLEEP ENVIRONMENT IN FAMILY CHILD CARE HOMES

Tayla Ash, ScD, MPH¹, Kim M. Gans, PhD, MPH², Alison Tovar, PhD, MPH³, Patricia M. Risica, DrPH⁴¹Brown University, Providence, RI; ²UConn, Storrs, CT; ³URI, Kingston, RI; ⁴Brown School of Public Health, Providence, RI**Objective:** To conduct in-person observations of the sleep environment in Family Child Care Homes (FCCHs), which has never before been studied.**Methods:** We observed the childcare sleep environment in 24 FCCHs.**Results:** Children napped on a variety of sleep surfaces (e.g. cot/mat, playpen, crib, bed, couch, floor) and with a variety of items (e.g. blanket, pillow, stuffed animal, pacifier, book, sippy cup or bottle, multiple items, no items). Providers commonly engaged in environmental changes such as altering the light (69% dimmed or shut off the lights) or noise level of the room (41% played music) during naptime. The overall noise level during naptime was rated as very quiet in 53% of FCCHs, somewhat quiet in 35%, and not quiet in 12%. Disruptive noises while children were sleeping were observed in 35% of FCCHs. Electronics (e.g. television, tablets) were used during naptime in 27% of FCCHs, and variability with regards to the proximity in which children slept to one another was observed, whether or not providers helped children fall asleep, and flexibility as to when and for how long children napped.**Conclusions:** Nap environments vary widely across FCCHs. Further research is needed to understand how the childcare nap environment influences child sleep and other behaviors.

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CITATION AWARD WINNER

Paper Session 49

3:45 PM-4:00 PM

NIGHTLY SLEEP QUALITY, DAILY AFFECT, AND PERCEIVED SAFETY AMONG YOUNG ADULTS EXPERIENCING HOMELESSNESS

Brian W. Redline, BA¹, Eldin Dzubur, PhD¹, Danielle R. Madden, PhD¹, Benjamin F. Henwood, PhD, MSW¹¹University of Southern California, Los Angeles, CA**Introduction:** Young adults who are homeless experience daily adversities and high rates of emotional disturbances that may be related to poor sleep, but the directionality of such associations is unclear. This study examines the effects of daily affect and perceived safety on nightly sleep quality, and of sleep quality on next-day affect, among young adults who are homeless.**Methods:** Young adults (n=107, ages 18-25) recruited from homeless shelters and drop-in centers completed a baseline survey and seven days of smart-phone surveys including daily retrospective surveys and ecological momentary assessments (EMA) at 2-hour intervals during waking hours. Daily surveys assessed prior night sleep quality and EMA assessed current affect and perceived safety on 5-point scales that were collapsed to daily means. Separate mixed-effects logistic regressions evaluated the between-subject (BS) and within-subject (WS) effects of positive affect (i.e., happy, calm, excited), negative affect (i.e., sad, stressed, irritated), and perceived safety on nightly sleep quality, and of sleep quality on next-day affect. Covariates included age, sex, race, and depression score (PHQ-9).**Results:** Participants (age: 21.8±2.0, 69% male, 55% Black) were followed for an average of 5.9±1.4 days. Those who on average reported feeling less negative affect, more positive affect, or safer during the day than others were more likely to have better sleep quality in general (ORs=0.88, 1.14, 1.24; p'<.001), and the likelihood of an individual reporting better sleep on a given night was associated with feeling more positive (OR=1.13, p<.01), less negative (OR=0.92, p<.05), or safer (OR=1.20, p<.001) than their average that day. Sleep quality was also associated with next-day affect: Those who slept better on average were generally more likely to have less negative (OR=0.87, p<.01) and more positive affect (OR=1.21, p<.001), and sleeping better than one's average was associated with higher odds of less negative (OR=0.96, p<.01) and more positive affect (OR=1.02, p<.05) the next day.**Conclusions:** We found bidirectional effects between sleep quality and waking affect within and between subjects, with relatively stronger effects in the direction from affect to nightly sleep quality. The strongest BS and WS effects were between daytime perceived safety and sleep quality that night, emphasizing the importance of not only providing access to shelters at night, but also safe spaces during waking hours.

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Paper Session 49

4:00 PM-4:15 PM

USING SLEEP TREATMENT ADVERTISED ON WEB-BASED SOCIAL MEDIA TO RECRUIT HEAVY-DRINKING YOUNG ADULTS FOR ALCOHOL TREATMENT

Garrett I. Ash, PhD¹, Momoko Ishii, B.S.², Brian Pittman, MS², Kelly DeMartini, PhD³, Stephanie O'Malley, Ph.D.³, Nancy S. Redeker, Ph.D.⁴, David S. Robledo, BS Public Health⁵, Lisa Fucito, PhD²

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Background: Alcohol use disorder onset peaks during young adulthood, but young adults rarely self-identify for specialized alcohol treatment. Thus, more work is needed to identify novel treatment engagement strategies to reduce this substantial public health burden. Heavy alcohol use may disrupt sleep, and we have previously shown that young adults are interested in the connection between sleep and alcohol and are open to getting help for their sleep. Therefore, we have started a novel program focused on using sleep treatment as a way to engage heavy-drinking young adults.

Objective: This study examined utility of social media advertisements for our sleep treatment research study to recruit heavy-drinking young adults and evaluated sleep and alcohol use and current treatment goals among those who responded to the web-based survey.

Methods: Using Facebook's and Snapchat's advertising programs, 3 separate advertising slogans ran for 5 months targeting young adults who either had sleep concerns or were open to participating in a sleep program. Advertisements were shown to young adult (18-25yr), English-speaking Facebook and Snapchat users in the greater New Haven, Connecticut, area. Participants were invited to complete a Web-based survey to determine initial eligibility for a sleep treatment study.

Results: Advertisements generated 6,983 clicks and 823 valid, completed surveys in 5 months. Fees averaged \$0.35 per click, \$2.97 per completed survey, \$6.73 per participant meeting initial screening eligibility, and \$62.78 per participant enrolling in the study. On average, those who completed the web-based survey were $X \pm SD$ 21.2 \pm 2.3 yrs of age, and 68.6% (630/919) were female. Most reported sleep concerns (78.6%) and interest in the connection between sleep and alcohol (65.0%) but few concerns about alcohol (5.9%). A large fraction (39.6%) met the inclusion criteria of being high-risk drinkers (Alcohol Use Disorders Identification Test (AUDIT-C) ≥ 5 women, ≥ 7 men). Those not meeting the drinking criteria had better subjective sleep quality (2.9 \pm 0.9 out of 5) compared with those who met the criteria but did not enroll (2.7 \pm 0.8) and those who enrolled (2.5 \pm 0.9) ($p < 0.01$). In addition, those who met criteria but did not enroll had less severe drinking than those enrolled (AUDIT-C 6.6 \pm 1.6 vs 8.1 \pm 1.7, $p < 0.01$). Of those meeting drinking criteria, 12.0% (39/325) enrolled.

Conclusion: Social media advertisements designed to target young adults who had sleep concerns reached those who also drank alcohol heavily. Few were concerned about alcohol, but heavier drinking was associated with greater likelihood of enrolling in the sleep treatment. Using social media advertising for sleep treatment appears effective to engage heavy-drinking young adults, although costs were 2x-5x higher per enrolled participant than previous reports. Further work should target making the approach more cost effective.

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CITATION AWARD WINNER

Paper Session 49

4:15 PM-4:30 PM

TIME FOR BED! EARLIER SLEEP ONSET IS ASSOCIATED WITH LONGER NIGHT SLEEP DURATION DURING INFANCY

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Background: Shorter sleep duration during infancy is associated with adverse health outcomes such as obesity. Clinical recommendations suggest putting infants to bed using short, consistent bedtime routines at an appropriate hour to promote longer nighttime sleep duration; yet, there is a lack of data examining bedtime routines and objective measures of infant sleep. We used actigraphy to explore how bedtime routines were associated with nighttime total sleep time and sleep quality across the first 6 months of life.

Methods: Infants ($n = 23$; ~80% White) wore actigraph (Actiwatch Spectrum) devices on their right ankle for three, 1-week periods at 6, 15 and 24 weeks of age. Data were scored using a SAS-based validated algorithm and corrected using visual assessment. Nighttime total sleep time (TST) and sleep efficiency (i.e., quality) were quantified. Sleep onset was the start of actigraphy-defined nighttime sleep periods. Bedtime routine length, number of activities, feeding as the last activity, and frequency of the doing the same routine were reported by mothers using the Brief Infant Sleep Questionnaire at each age. Multilevel models examined between- and within-person associations between sleep onset, aspects of bedtime routines, and subsequent TST/quality.

Results: As infants aged, sleep onset got earlier (6 weeks: ~9:30PM; 15 weeks: ~8:40PM; 24 weeks: ~8:20PM; $p < 0.01$) and bedtime routines got shorter (6 weeks: 53.9 \pm 5.4 min; 15 weeks: 47.4 \pm 5.4 min; 24 weeks: 35.7 \pm 5.4 min; $p = 0.03$). On average, 6.7 \pm 2.1 activities were done during bedtime routines, and feeding was the last activity for 25% of infants, which did not differ by infant age (p 's > 0.05). Between-person analyses indicated that across all ages, earlier sleep onset was associated with longer TST (22 \pm 10.0 min longer for each 1 hr earlier; $p = 0.03$), and not associated with nighttime sleep efficiency ($p = 0.49$). Within-person analyses showed that when infants' sleep onset was earlier than usual, TST was longer and less efficient that night (34.4 \pm 2.7 min longer; 1.2 \pm 0.3% less efficient for each 1 hr earlier). Bedtime routine length, number of activities, feeding as the last activity, and frequency of doing the same routine were not associated with TST or efficiency at any age (p 's > 0.05).

Conclusion: Infants who went to sleep earlier, also slept more at night. Keeping infants up later in hopes of them sleeping longer may be counterproductive. Our findings align with pediatric recommendations for older children exhibiting mood or behavioral problems, where insufficient sleep may be a contributing factor, and earlier bedtimes are recommended.

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Paper Session 49

4:30 PM-4:45 PM

EXAMINING THE ASSOCIATION BETWEEN HOME ENVIRONMENTAL FACTORS AND ADOLESCENT SLEEP HEALTH BY GENDER

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Introduction: Tackling adolescent obesity rates requires an understanding of modifiable risk factors, such as sleep health. Following behavioral approaches (e.g., the social ecologic model) that recognize the role of social and environmental context on behaviors, we hypothesize that adolescent sleep is influenced by home environmental factors. We examined the association of two factors- adolescent screen time and parental sleep quantity- with adolescent sleep quantity and quality by gender (male/female) in the National Cancer Institute's Family Life, Activity, Sun, Health, and Eating (FLASHE) study.

Materials and Methods: FLASHE measured correlates of cancer preventive behaviors in a national sample of parent and adolescent child dyads in 2014. Dyads with adolescents in middle or high school at survey time were included; dyads with missing data or unrealistic total sleep values (< 2h or >16h) were excluded. Adolescent total screen time was defined as total time reported watching television, playing videogames, and using computers, tablets and cell phones. Total average sleep quantity was calculated based on reported sleep and wake times on a typical weekday and weekend day. Sleep quantity and quality were dichotomized based on meeting American Academy of Sleep Medicine's age-specific sleep guidelines and if participants report trouble staying asleep at night, respectively. Sex-stratified, logistic regression models were fit to examine if 1) adolescent screen time and 2) parental sleep quantity were associated with adolescent sleep quantity. The association between adolescent sleep quantity, screen time, and parental sleep quantity together with sleep quality was explored. Models controlled for socio-demographics: adolescent age and race/ethnicity, total household income, and parent marital status.

Results: Of the 1,202 dyads, 51.2% included female adolescents. More females than males reported trouble staying asleep (60.4% vs. 39.6%, $p = 0.016$). Screen time was inversely associated with adolescent sleep quantity in males (odds ratio (OR) (95% CI) = 0.91 (0.85-0.97) but not females (OR = 0.98 (95%CI: 0.92-1.05). Parental sleep quantity was also positively associated with adolescent sleep quantity in males (OR = 1.24 (95%CI: 1.06-1.45) but not females (OR = 1.08 (95%CI: 0.93-1.26)). Adolescent sleep quantity was not associated with sleep quality; in the exploratory model, only screen time was associated with sleep quality in both males (OR: 0.89 (95%CI: 0.81-0.98)) and females (OR: 0.86 (95%CI: 0.79-0.94)).

Conclusion: Our study highlights the importance of the home sleep environment, for adolescent sleep health. Though we cannot infer causality, we suggest that parental sleep quantity, adolescent screen time, and sex differences be considered in future sleep behavior interventions among adolescent populations.

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Paper Session 50

3:30 PM-3:45 PM

THE STRUCTURE OF HIV RISK AND PROTECTION IN A FACEBOOK GROUP AFFILIATION NETWORK AMONG YOUNG BLACK MEN WHO HAVE SEX WITH MEN

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The social networks of young sexual and racial minorities are critical in determining the HIV protections and risks they experience. Increasingly, their interactions occur via social networking sites (SNS) like Facebook, making online networks critical prevention engagement frontiers. Here, we underscore the intermediary role played by Facebook groups in an online HIV risk network among young Black men who have sex with men (YBMSM). Although HIV risks and protections are thought to emerge from the organization of individual behaviors in a network, Facebook group memberships could supplement such organization by virtue of the topics discussed in those spaces. As such, we investigate how Facebook group topics directly related to HIV vulnerability (e.g., LGBTQ Identity) and indirectly related (e.g., Professional Development) work in combination with HIV-related traits of YBMSM as mechanisms of online interaction.

We draw on data from a longitudinal cohort study of YBMSM in Chicago. Demographic, behavioral, and network data, including Facebook group affiliations, were collected from consenting respondents (N=347). We conceptualize YBMSMs' Facebook group affiliations as a network comprised of two node sets — YBMSM and Facebook groups — with ties between YBMSM and groups representing their group affiliation. Then, using a class of statistical models called exponential random graph models, we estimate the likelihood of group affiliation ties being present as a function of group topics and YBMSMs' HIV-related characteristics.

The main component of the Facebook group affiliation network included 82 groups and 221 YBMSM, with 1,260 affiliation ties between them. Topically, the 82 groups were categorized as focusing on *LGBTQ Identity*, *Personal/Professional Development*, *General Chat*, *Nightlife*, *Sexual Attraction*, or *Other*. Results show that individuals were less likely to belong to LGBTQ Identity, Sexual Attraction, and Chat groups and more likely to belong to Personal/Professional Development groups. Meanwhile, YBMSM who were members of at least one LGBTQ Identity, Sexual Attraction, and/or Nightlife group were more likely to cluster around pairs of these groups, respectively. Finally, group topic preferences were significantly associated with specific HIV-related characteristics. YBMSM who engaged in condomless sex tended to affiliate with LGBTQ Identity groups, those who knew about PrEP tended to affiliate with Chat groups, and regular testers tended to belong to LGBTQ Identity and Nightlife groups.

As SNS are now mainstreamed, it behooves researchers to understand their role in forging sexual norms in high-risk populations. Developing interventions that leverage the Facebook group network of YBMSM and, by extension, the topics they discuss, may prove more effective than off-the-shelf interventions that remain agnostic to the needs and interests of this population.

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Paper Session 50

3:45 PM-4:00 PM

POOR SLEEP AND TIREDNESS PREDICT DAILY SELF-EFFICACY FOR MEDICATION ADHERENCE IN OLDER SEXUAL MINORITY MEN LIVING WITH HIV

Brett M. Millar, PhD¹, Mathilde Ghislain, MSc¹, Nicola Forbes, BA², Juan P. Castiblanco Bustos, n/a¹, Carly Wolfer, BA³, H. Jonathon Rendina, PhD, MPH⁴

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Background: Given the myriad health benefits of achieving and maintaining an undetectable viral load for people living with HIV, we need to better understand the complex factors that can compromise medication adherence on a given day. Existing research, however, has rarely considered the role of sleep, even though the evidence base for poor sleep's deleterious impact on cognition, emotion, and self-regulation, is vast and growing. Our study explores how last night's sleep quality and today's current tiredness each predict today's self-efficacy for medication adherence, emotion dysregulation, and perceived ability to handle challenges, among a sample of older sexual minority men living with HIV.

Method: Our EMA study involves a 21-day diary design. Participants are NYC-based older (50+) sexual minority men (SMM) living with HIV, reporting suboptimal antiretroviral (ART) adherence. As well as other mood and behavior items, the daily diary asks about: last night's sleep quality (A), current tiredness (B), medication adherence self-efficacy (C), emotion dysregulation (D), and perceived ability to handle today's challenges (E). Multilevel linear modeling tested six models: the influence of within-person A on C-E, and the influence of within-person B on C-E separately, adjusting for between-person A and B, respectively.

Results: Analyzing 845 days of data from 46 participants (mean completion of 18.4 diaries, out of 21), worse-than-usual sleep quality and greater-than-usual tiredness each predicted: lower self-efficacy for medication adherence ($B=0.01$, $p<.05$; $B=-0.29$, $p<.001$), greater emotion dysregulation ($B=-0.01$, $p<.01$; $B=0.60$, $p<.001$), and lower perceived ability to handle the day's challenges ($B=0.01$, $p<.01$; $B=-0.13$, $p<.01$).

Discussion: We found that last night's poor sleep and current tiredness predicted each outcome in a sample of older SMM living with HIV. This highlights the relatively under-studied importance of sleep for factors likely affecting medication adherence. Interventions to improve sleep health thus have the potential to improve ART medication adherence, as well as general physical and mental health. These are especially needed for older people living with HIV given that rates of sleep disturbance associated with normative aging are particularly elevated in the context of HIV, as well as other comorbid chronic conditions. This much-needed focus on sleep represents an innovative opportunity for behavioral medicine research and practice to utilize a broader, whole-person framework in addressing the factors that can either promote or compromise health.

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Paper Session 50

4:00 PM-4:15 PM

PREDICTORS OF SUICIDAL IDEATION AND SUICIDE ATTEMPTS AMONG A NATIONWIDE COHORT OF SEXUAL MINORITY MEN (SMM)

Ali Talan, DrPH¹, K. Marie M. Sizemore, PhD¹, Nicola F. Tavella, MPH, CPH², Aria Tilove, BA³, H. Jonathon Rendina, PhD, MPH⁴, Raymond L. Moody, M.A.⁵

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Background: Research has documented significant associations between minority stress processes and negative health outcomes, including suicidality (i.e. suicidal ideation and suicide attempts). Consistent with the minority stress theory, suicidality among SMM is associated with discrimination, harassment, and other victimization, emanating from diverse sources (e.g., family, peers, schools, and communities). While much of the literature has focused on interpersonal discrimination, little is known about how structural discrimination, represented by state-level policies regarding LGBT populations, influence risk of suicide among GBM individuals. We hypothesize that stigma at the structural level shape prejudiced policy, facilitate marginalization, and increase risk of suicidality.

Methods: Data are from UNITE, a cohort study of HIV-negative SMM from across the United States ($N=7952$; $\text{Mage}=32.7$; $\text{SD}=11.4$). Suicidality was assessed using the NIMH Ask Suicide-Screening Questions Toolkit. We conducted chi-square analyses to examine group difference on suicidality. We also conducted a binary logistic regression to examine the association between structural discrimination and suicidality, adjusting for sociodemographic characteristics, interpersonal discrimination, internalized homophobia, and mental health factors known to influence suicidality risk. We adjusted for resiliency (e.g., perceived social support, gay community attachment, "outness"). Structural discrimination was assessed by the State Equality Index (SEI), measuring LGBT-related legislation (e.g., parenting, religious refusal and relationship recognition, non-discrimination, hate crimes, health/safety, and youth-related laws and policies).

Results: We found that 20.7% of the sample reported a suicide attempt in their lifetime. In the past few weeks, 17.6% reported experiencing suicidal ideation, with 9.1% reporting thoughts of killing themselves in the past 7 days. Significant differences by sociodemographic characteristics, interpersonal discrimination, internalized homophobia, resiliency and mental health factors, were identified. Our regression analysis indicated that individuals living in states with the most comprehensive equality measures had significantly lower odds of both suicidal ideation ($\text{AOR}=.84$, $p=.03$) and suicide attempts ($\text{AOR}=.85$, $p<.001$).

Conclusion: Limited research on minority stress includes measures of stigma at both the individual and structural level to determine whether these factors independently predict adverse health outcomes. This study demonstrated that structural discrimination, in addition to known individual and interpersonal risk factors, increase risk of suicidality among GBM. These results suggest that identifying structural interventions may help to reduce sexual orientation-related disparities in suicide attempts.

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MERITORIOUS AWARD WINNER

Paper Session 50

4:15 PM-4:30 PM

SYNDEMICS, SELF-REGULATION, AND HIV TRANSMISSION RISK AMONG GAY AND BISEXUAL MEN

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Background: Research has identified multiple epidemics that disproportionately affect gay and bisexual men (GBM), have high levels of comorbidity, and work synergistically to increase HIV transmission risk behavior (TRB). The syndemic framework has been useful in identifying GBM at increased risk of TRB but less is known about potential mechanisms that link the epidemics that are part of the HIV syndemic. The present study is a longitudinal analysis of executive attention and emotion dysregulation as mediators of the effects of childhood sexual abuse and intimate partner violence on depression, sexual compulsivity, polydrug use, and TRB.

Methods: Data are from One Thousand Strong, a cohort of HIV-negative GBM from across the United States (M_{age}=40.33, SD=13.67). Childhood sexual abuse and intimate partner violence were assessed at baseline and 12-month follow-up. Executive attention, emotion dysregulation, depression, sexual compulsivity, and polydrug use were assessed at 24-month follow-up. TRB (i.e., condomless anal sex with male casual partner) was assessed at 36-month follow-up. A negative binomial logistic regression model was estimated using Mplus with executive attention and emotion dysregulation as mediators of the associations between childhood sexual abuse and intimate partner violence on depression, sexual compulsivity, polydrug use, and TRB.

Results: The analytic sample included 922 GBM. In our path model, adjusting for sociodemographic characteristics, childhood sexual abuse was directly associated with greater emotion dysregulation and poorer executive attention, and was positively associated with depression and sexual compulsivity through these difficulties with self-regulation. Intimate partner violence was associated with greater emotion dysregulation but not with executive attention, and was positively associated with depression and sexual compulsivity through these self-regulation difficulties. Childhood sexual abuse and intimate partner violence were both associated with TRB through the combined indirect effects of self-regulation difficulties, depression, sexual compulsivity, and polydrug use.

Conclusions: The results from this study provide supporting evidence that executive attention and emotion dysregulation mediate associations between several epidemics considered part of the HIV syndemic among GBM. Interventions that target executive attention and emotion dysregulation may have a significant impact on TRB among GBM by reducing the syndemic burden in this population.

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Paper Session 50

4:30 PM-4:45 PM

MINORITY STRESS AND THE HPA AXIS: DAILY INTERNALIZED HIV STIGMA AND CORTISOL REACTIVITY AMONG SEXUAL MINORITY MEN WITH HIV

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Background: The minority stress literature has established both between-person and within-person effects of internalized HIV stigma—a common stressor for people living with HIV—on a range of affective and behavioral health outcomes. However, little published work to date has examined the extent to which minority stress activates a hypothalamic-pituitary-adrenal (HPA) axis response, which may help to elucidate one mechanism through which stigma leads to health disparities.

Method: We collected ecological momentary assessment data on stigma paired with three salivary collections (i.e., at waking, around noon, and around 9pm) for ten days from sexual minority men (SMM) living with HIV in New York City. Daily data on internalized HIV stigma were disaggregated into between- and within-person effects based on standard procedures for variance decomposition. In addition to log cortisol values for each time point, we also calculated an area under the curve (AUC) value for each day. We conducted three mixed models to examine how disaggregated effects of afternoon reports of internalized HIV stigma were associated with daily AUC and the afternoon and evening cortisol levels adjusted for morning levels. Across models, we adjusted for daily caffeine use, nicotine use, and exercise.

Results: We analyzed 252 days' worth of data across a diverse sample of 46 SMM. Across models, results were consistent—we found a significant and positive effect of between-person internalized HIV stigma on cortisol AUC ($B = 0.79, p < .001$) as well as afternoon ($B = 0.04, p = .02$) and evening ($B = 0.10, p < .001$) log cortisol levels. In other words, people who tend to experience higher levels of internalized HIV stigma across days also experience higher cortisol on a given day. In contrast, we did not identify within-person effects ($B = 0.79, p = .94$; $B = -0.03, p = .47$; $B = 0.06, p = .14$), suggesting unique daily experiences of internalized HIV stigma did not co-occur with increased cortisol.

Conclusions: This study provides support for a biopsychosocial model of minority stress and health, suggesting that SMM prone to experiencing internalized HIV stigma have higher daily levels of cortisol. Surprisingly, we did not find increases in cortisol during specific event-level occurrences of higher internalized HIV stigma. Given the immune-suppressing effect of cortisol, particularly if chronically activated, this suggests the importance of stigma reduction interventions to improve health for SMM living with HIV.

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Paper Session 51

3:30 PM-3:45 PM

PHYSICAL ACTIVITY ADVISING BY HUMANS VS. COMPUTERS IN UNDERSERVED POPULATIONS: THE COMPASS2 TRIAL MAJOR RESULTS

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While current physical activity (PA) guidelines emphasize convenient aerobic activities such as walking, less than half of U.S. adults meet these guidelines. Older, low-income, and ethnic minority adults are at particular risk for inactivity due to factors such as reduced access to convenient, customized programs. Technology-enabled delivery channels represent a potentially cost-efficient and practical means for providing customized PA guidance to diverse groups, but most people targeted by eHealth are well-educated, < 50 years old, and non-Hispanic white. This cluster-randomized noninferiority trial tested whether PA advising by a computer-based virtual advisor (Virtual; N=123) was no worse than advising by trained human advisors (Human; N=122) in increasing 12-month walking levels among older inactive Latino adults. The Virtual advisor ("Carmen") was an animated computer agent that simulated face-to-face counseling using simple speech (synthetic English or Spanish) and nonverbal behaviors. The bilingual Human advisors were trained peers—an effective and resource-efficient approach that is well accepted by Latino adults and other diverse groups, but may be less scalable than computer-based programs. Each program was delivered individually at local community centers and followed a similar protocol. 12-month change in weekly walking minutes was measured using a validated interview instrument and corroborated with accelerometry. Intent-to-treat methods were applied. The study retention rate was 94.3% for the sample (ages 50–87 years; 79% women; 44% with < high school education; mean BMI [SD]=32.8 [6.8]). Mean 12-month change in total weekly walking minutes (SE) was 153.9 (18.5) for Virtual and 131.9 (16.6) for Human (difference=22.0, with the lower limit of the 1-sided 95% confidence interval [-0.10] to the right of the noninferiority margin [-.30]; P=0.66), supporting noninferiority. While no participants initially met the nationally recommended PA target range, ~30% in both programs achieved this level at 12 months. Significant improvements emerged in both arms for relevant clinical risk factors (BMI, resting blood pressure), sedentary behavior, and well-being measures (Ps< .05). The results significantly broaden evidence-based alternatives for PA advising for inactive populations, with Virtual program improvements no worse than those achieved by Humans, while using less participant time (total advising hours=3.2 for Virtual, 6.9 for Human, P< .001).

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Paper Session 51

3:45 PM-4:00 PM

PEER COACH DELIVERED STORYTELLING PROGRAM FOR DIABETES MEDICATION ADHERENCE: INTERVENTION DEVELOPMENT AND PROCESS OUTCOMES.

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Background: Medication adherence can improve health outcomes in patients with diabetes. However, diabetes medication adherence rates remain suboptimal, despite substantial efforts in recent years targeting this issue, and developing and implementing effective interventions continue to be challenging. We present the development and implementation of Living Well with Diabetes, a cluster randomized controlled trial of an intervention using peer support and storytelling to improve diabetes medication adherence in Alabama.

Methods: We used an iterative process that combined program adaptation, pretesting, and peer coach training and collaborated with community members and peer coaches for formative evaluation and qualitative feedback. Peer coaches were from the community of interest who had diabetes or took care of a family member with diabetes. Study participants were adults, living in the community, taking oral medications for diabetes, and were medication non-adherent or wanted help taking their medications.

Results: The finished program was six-month intervention delivered over the telephone. Participant materials included an activity book and educational videos. These videos integrated personal stories of community members accepting their illness and overcoming barriers to medication-taking and other self-care activities. To deliver the telephonic coaching, we trained and certified 19 peer coaches. The 473 participants enrolled in the study were mostly African-American (91%), women (79%), lower income (70% with annual income < \$20,000), and unemployed (73%). Program completion was 85%. Fidelity was high, with 82% of intervention participants completing all program sessions. Participants reported high program satisfaction (95%) and that they used and found the program materials (91%) and videos (96%) helpful. Participants felt that their peer was easy to talk with (93%), support received from their peer was great or good (95%), and they felt comfortable with their peer (92%). Moreover, participants reported that they felt that their peer knew the program well (93%) and that they would recommend a peer to a friend or a relative with a similar health condition (93%).

Discussion: Living Well was developed and implemented in high need communities in Alabama with high retention and fidelity. The participants were satisfied with the program and with their interactions with their peer coach. Our approach may be helpful for others seeking to develop and implement a medication adherence program in their communities.

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Paper Session 51

4:00 PM-4:15 PM

MOMENTARY CHANGES IN HEART RATE VARIABILITY CAN DETECT RISK FOR EMOTIONAL EATING EPISODES

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Objective: Emotion dysregulation is a known risk factor for a variety of maladaptive eating behaviors, including emotional eating. New passive sensing technologies offer the prospect of detecting emotion dysregulation in real-time through measurement of heart rate variability (HRV), a transdiagnostic bio-signal of emotion regulation, which may in turn signal risk of engaging in a maladaptive eating behavior. In the current study, our primary aim was to test whether momentary changes in HRV can be used to detect risk of experiencing an emotional eating episode in an ecologically valid setting using a wrist worn sensor.

Method: Participants were 21 adults with clinically significant emotional eating behaviors. Participants wore the Empatica E4 wrist-sensor and tracked all emotional eating episodes using ecological momentary assessment for four weeks. Time and frequency domain features of HRV were extracted in the 30-minute period preceding emotional eating episodes and control cases (defined as the 30 minutes prior to an EMA survey that did not contain an emotional eating episode). Support vector machine (SVM) learning models were implemented using time domain and frequency domain features.

Results: SVM models using frequency domain features achieved the highest classification accuracy (77.99%), sensitivity (78.75%), and specificity (75.00%). SVM models using time domain features still performed above chance, though were less accurate at classifying episodes (accuracy 63.48%, sensitivity 62.68%, and specificity 70.00%).

Discussion: Wearable sensors that assess HRV show promise as a tool for capturing risk of engaging in emotional eating episodes.

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Paper Session 51

4:15 PM-4:30 PM

FLEX: AN APP THAT ENHANCES AUTOMATIC EVALUATIONS OF EXERCISE

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Amidst the growing interest in dual process frameworks within exercise psychology research, evidence has established an association between exercise behavior and automatic evaluations of exercise (i.e., spontaneous evaluations based on mental associations between ‘exercise’ and ‘good’ or ‘bad’ that manifest into approach tendencies). Although associative learning-based training such as evaluative conditioning has been shown to be effective in lab-based settings, the training regimens are not inherently engaging and therefore it is unclear how to deliver this behavior change technique in a scalable manner. Gamification elements such as tracking progress, offering challenges with levels that vary incrementally in difficulty, and giving rewards can enhance engagement in health behavior interventions. This study was designed to test the effectiveness of a mobile health intervention to manipulate automatic evaluations of exercise in a real-world setting utilizing engaging features of gamification. Flex was designed based on evaluative conditioning with gamification elements. Participants ($N = 228$, 82% female, M age = 33) were randomly allocated to have access to either *Flex Exercise* – a game-based app which contained 70% exercise-related content or *Flex Control* – the same game-based app with no exercise content. The study was described to participants, not as an exercise intervention, but as a study on ‘brain games’. Participants completed an Implicit Association Test (IAT) and self-report questionnaire of exercise intention, habit, and affective judgments immediately after exposure to Flex and 24 hours later. Participants were then debriefed on the study’s true Purpose. A non-statistically significant between-group difference was observed immediately after exposure to Flex for automatic evaluations ($\beta = .06$); however one day following exposure, those in the *Flex Exercise* condition had significantly more favorable automatic evaluations of exercise than those in the *Flex Control* condition ($\beta = .15$, $d = 0.30$). The effect remained after controlling for intention, habit, and affective judgments. This study demonstrates the potential for mHealth interventions to influence automatic evaluations of exercise through engaging application of associative learning-based training. Future research is needed to see if these intervention effects translate into behavior change.

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Paper Session 51

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EFFECTS OF AN INTERNET-BASED COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA PROGRAM ON PRODUCTIVITY: A SECONDARY ANALYSIS

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Objectives: Insomnia is associated with lost work productivity. Prior studies suggest that cognitive-behavioral therapy (CBT) for insomnia, a first-line treatment for insomnia, may improve work productivity through at least six months post-treatment. In this secondary analysis of a large-scale randomized controlled trial, effects of CBT for insomnia delivered by Internet on both work-related and daily activity productivity were examined out to one year following participant baseline.

Methods: Participants (N=303) were randomized to receive either an Internet-based CBT for insomnia program (SHUTi: Sleep Healthy Using the Internet) or Internet-delivered patient education (PE). Participants completed the Work Productivity Activity Impairment at baseline (prior to randomization), end of the intervention period (post-assessment, 9 weeks post-baseline), and 6- and 12-month follow-ups. At each time point, measures of absenteeism, presenteeism, and total impairment were calculated for formally employed participants; daily activity impairment was calculated for all participants.

Results: Logistic regression controlling for baseline impairment demonstrated that participants randomized to SHUTi were about 50% less likely than PE to report any absenteeism, total impairment, or activity impairment at post-assessment ($p < .038$); however, these differences were not sustained at 6- or 12-month follow-ups ($p > .070$). Constrained longitudinal data analysis demonstrated that SHUTi participants reported lower overall levels of presenteeism, total impairment, and activity impairment at post-assessment ($p < .013$) relative to PE and differences were sustained at 6-month follow-up for presenteeism and total impairment ($p < .045$); effects were small to moderate ($0.23 < d < .034$). No differences were present by 12-month follow-up ($p > .178$).

Conclusions: Participants in both PE and SHUTi conditions tended to report declining work-related and daily activity impairment over time. Those in the SHUTi condition demonstrated more precipitous declines in impairment over the course of treatment, although differences between conditions were generally not sustained by 6- or 12-months after treatment. Findings suggest Internet-based CBT-I may help accelerate improvement in work-related and daily activity impairment, although further research is warranted to understand the extent to which low-intensity interventions such as insomnia psychoeducation may also produce long-term improvements.

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Friday

April 3rd, 2020

6:15 PM-7:30 PM

C101

6:15 PM-7:30 PM

OLDER ADULTS' REMEMBRANCE OF THE PAST AND IDEAS ABOUT THE FUTURE INFLUENCE PERCEPTIONS OF CURRENT LIFE: A QUALITATIVE STUDY

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Aging theories emphasize older adults' perception of life remaining, the availability of social resources, and one's identity as important factors associated with physical health and emotional well-being (Carstensen et al., 1999; Charles, 2010; Krause, 2004). This qualitative analysis of interviews identified themes based on older adults' own descriptions of their experiences; results were interpreted in the context of aging theories.

Twenty-four participants ($M_{age} = 69.53$ years; age range = 63-78 years; 54% female; 58% White, 29% Black) from the Notre Dame Study of Health & Well-Being (Whitehead & Bergeman, 2014) completed interviews describing major turning points across their lives. Audio files were transcribed and analyzed for emergent themes using the constant comparative method (Maykut & Morehouse, 1994).

Twelve core themes emerged from the interviews, which clustered within four domains: *Health*, *Family*, *Death*, and *Outlook*. Themes within the *Health* domain suggested that participants often compared their health to their peers' health or to their expectations about health typical of someone their age. Participants described living with chronic disease and overcoming challenges with illness and some participants expressed a fear of physical decline or an anticipation of death. The *Family* domain consisted of participants' understanding of their identities as parents, children, and partners. Some participants described experiences that illustrated multiple identities such as past parenting experiences demonstrating their roles as parent and partner. Most participants described their relationships with family members as meaningful; although descriptions of past and current family conflict also emerged. The *Death* domain relates to participants' expectations of remaining life as some participants expressed an anticipation of death whereas others described anticipating more life. Additionally, the recollection of others' deaths shaped how participants thought about their current lives. The *Outlook* domain included participants' views towards their past and present lives, often expressing an overall satisfaction with their lives or describing a general life philosophy that guides their attitudes and understanding of their current lives.

Taken together, these results are consistent with many tenets across aging theories and the richness of qualitative data highlight important diversity in how older adults' view their current lives.

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SEDENTARY BEHAVIOR OF LOW-MODERATE FUNCTIONING OLDER ADULTS AS MEASURED BY ACTIVPAL: COMPLIANCE AND ACCEPTABILITY.

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Introduction: High amounts of sedentary behavior (SB) are related to adverse health in older adults. The activPAL device is the gold standard measurement for SB but little research has reported the acceptability of wear in older adults of lower physical function, the most sedentary age group¹⁻³

Purpose: This study reports the SB and compliance and satisfaction of activPAL wear in older adults of moderate-to-low physical function.

Methods: Participants (N=71; Mean_{age} = 87±6.6) were older adults of low-to-moderate physical function (i.e., ≤8 on the Short Physical Performance Battery⁴), instructed to wear the activPAL device for seven days and complete a sleep log. The device was waterproofed and attached with adhesive (i.e., TegadermTM) to the mid-thigh. After wearing the device, SB data were aggregated into daily averages of SB variables and participants completed a satisfaction survey.

Results: After removing sleep time, participants spent an average of 11.1±1.7, 3.3±1.6, and 1.0±0.4 hrs/day of time sitting, standing, stepping, respectively. They spent 74±11 %/day of their waking time sitting. All participants provided ≥4 valid (>10hrs/d) days and 94% (n=67) and 89% (n=63) provided 6 and 7 valid days, respectively. Most (75%; n=53) provided completed (>75% complete) sleep logs. Four percent (n=3) partially completed (25-75% complete) and 21% (n=15) did not complete (< 25% complete) a recorded sleep log. Based on the activPAL satisfaction survey, 93% (n = 64) indicated that the device was not bothersome at all. Most participants (88%; n=61) did not change the adhesive or need outside help while wearing (91%; n = 63) with anything related to the device. Nearly all 80% (n = 55) indicated they were willing to wear the device again.

Conclusion: The gold standard measurement for sedentary behavior, the activPAL, is acceptable in older adults of low-moderate physical function and maybe effectively used in in SB interventions in this population.

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EXPLORING INTEGRATING YOGA AND A MATTER OF BALANCE EDUCATION FOR A FALL PREVENTION PROGRAM

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Exploring Integrating Yoga and Education for a Fall Prevention Program

Objective: The purpose of this study was to evaluate if combining a cognitive-behavioral fall prevention program- a Matter of Balance (AMOB) with an evidence-based therapeutic yoga program reduced fall risk factors for community-dwelling older adults to a greater degree than either program alone.

Methods: Community-dwelling older adults with concerns about falling were recruited through a local senior center. Potential participants attended an information session, signed an informed consent form, were screened to ensure they met inclusion criteria (score 3 or higher on the Mini-COG, be 60 years of age or older, have no contraindications for physical activity), completed a battery of psychosocial questionnaires, and completed physical performance measures. The 12-week intervention included eight sessions of AMOB led by a certified AMOB Master Trainer, and 16-sessions of therapeutic yoga (led by a yoga therapist (C-IAYT) or Registered Yoga Teacher (RYT-500)). The following instruments assessed outcomes at baseline (T1), between AMOB and yoga (T2), and again after the yoga intervention (T3): Chair Stand Test (CST), Timed Up and Go (TUG), Fullerton Advanced Balance Scale (FAB), University of Illinois Fear of Falling measure (FoF), Activity Specific Balance Confidence Scale (ABC), and Leisure Constraints Scale (LCS).

Results: A total of 13 participants with an average age of 76.00±6.69 completed the study. Friedman's test, a non-parametric repeated measures analysis, was conducted for each outcome and revealed a significant difference between scores on the TUG ($\chi^2=10.750(2)$, $p=.005$), FoF ($\chi^2=11.561(2)$, $p=.003$), and ABC ($\chi^2=16.884(2)$, $p=.000$). Post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significance level set at $p<0.017$. A significant difference was found on the ABC ($*Z=-3.180$, $p=.001$) between T1 and T2 indicating participants increased their confidence in their abilities throughout the MOB portion of the intervention. A significant difference was found on the TUG ($*Z=-2.521$, $p=.012$) between T2 and T3 indicating participants improved in agility and dynamic balance through the yoga component. There were significant differences found for FoF between T1 and T3 indicating that fear of falling decreased with the combination of the two components.

Conclusion: The education program improved in self-reported balance confidence while the yoga portion improved physical measures of dynamic and static balance. Finally, the participant's overall fear of falling improved only when combining the two interventions. Thus, findings suggest that combining cognitive-behavioral approaches and education with physical training may be more effective at reducing fall risk factors that either intervention alone.

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PHYSICAL ACTIVITY OUTCOMES IN OLDER AFRICAN AMERICAN ADULTS. THE PAACE STUDY.

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Introduction: Older African Americans face significant health disparities. Physical activity has been shown to reduce chronic disease risk factors, yet few physical activity studies have been conducted in this population. The purpose of the Program for African American Cognition and Exercise (PAACE) study was to determine if a community-based intervention on objective measures of activity in African American adults.

Methods: There were 56 older African Americans who were randomized into either a physical activity intervention (n = 28) or successful aging control (n = 28) group for 12 weeks. Participants in the intervention attended twice-weekly physical activity group sessions conducted at local YMCAs and were required to exercise 2-3 days per week at home for a total of 150 minutes of MVPA per week. Participants in the control group attended weekly educational sessions at an academic institution and did not receive a physical activity prescription. Assessments included self-reported physical activity, ActiGraph accelerometers, and Fitbit activity monitors (for participants in the intervention only).

Results: Participants were aged 69.3 (3.4) years, were majority female (69.6%), had a BMI of 32.3 (6.2), and ~50% had at least a college education. Attendance was 86% and 93%, for the control and intervention groups, respectively, and there was 100% retention. Participants in the intervention group self-reported more moderate to vigorous physical activity bouts per week (+3.5 (0.77) vs. -0.33 (0.79); $p < 0.001$) compared to those in the control group. Importantly, participants in the intervention group increased ActiGraph derived moderate to vigorous activity (7.3 (2.3) vs. 0.38 (2.3) min; $p = 0.037$) significantly more than the control group. Participants in the intervention group also increased ActiGraph derived steps per day significantly more than the control group (+787.8 (329.1) vs. -420.6 (334.6) steps, $p = 0.013$). Compliance with Fitbit wear was 82%.

Conclusions: PAACE is among the first studies to show that a 12-week community-based physical activity program can increase objectively measured physical activity among older African American adults. Longer follow-up is needed to determine if physical activity levels can be further increased and maintained, and if changes effect chronic disease risk factors.

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MEDICATION ADHERENCE IN CHRONIC CONDITIONS: A SCOPING REVIEW OF BARRIERS, FACILITATORS AND INTERVENTIONS

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Objective: Medication non-adherence (MNA) constitutes a complex health problem contributing to increased economic burden and poor health outcomes. Almost one in two patients with chronic conditions reports low adherence to their prescribed medication. The purpose of this scoping review was to identify the barriers associated with MNA and the interventions and techniques aiming to improve adherence among adult patients with chronic conditions with high MNA (asthma, hypertension, epilepsy, diabetes and cancer).

Method: Published and unpublished peer-reviewed studies (both quantitative and qualitative) of chronic health conditions with medication adherence explicitly stated as the primary or secondary outcome were included. PubMed, PsycINFO and Scopus databases were screened with 95 studies included. A mixed methods framework was used to synthesize the data.

Results: Most commonly reported barriers to MNA across conditions were younger age, low education, low income, high medication cost, side effects, patient beliefs/perceptions, comorbidities and poor patient-provider communication. Additionally, digital interventions such as SMS/text message interventions were commonly reported and often led to improvements in adherence rates.

Conclusions: This is the first review examining barriers to MNA across chronic conditions and the psychological interventions used for improving adherence. It highlights the importance of administering multicomponent interventions digitally, and personalized to the patients' individual needs and characteristics, in response to the barriers patients face in adhering to their medication. Stakeholders are called to explore methods overcoming barriers identified and developing effective multicomponent interventions that can reduce the high rates of MNA.

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CHARACTERIZATION OF CANCER-RELATED FATIGUE IN BREAST CANCER PATIENTS BY AGE GROUP THROUGH A MULTICENTER STUDY

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Background: Cancer-related fatigue (CRF) is a common symptom in patients as a result of cancer and cancer treatment. Often patients report greater symptoms during and after radiation treatment. Age may play a role, where younger patients self-report greater CRF symptoms than older patients. The aim of this study was to assess the change in CRF in breast cancer patients receiving radiation therapy by age group before and after radiation treatment.

Methods: In a phase II nationwide randomized controlled trial in the NCI Community Oncology Research Program (NCORP) network, female breast cancer patients receiving radiation therapy were followed over time. CRF symptoms assessed pre-treatment (T1), post-treatment (T2), at one week post-treatment (T3) and one month post-treatment (T4) using the Symptom Inventory (SI). Patients were divided into two age groups: younger age (< 60yrs, n=386) vs. older age (≥60 yrs, n=292). Multivariate regression analyses evaluated differences in CRF each time point.

Results: There were 678 patients with breast cancer in the analysis. Total CRF levels increased from T1 to T2 by 41% ($\beta \pm SE = 1.682 \pm 0.087$, 2.376 ± 0.103 respectively). CRF declined from T2 to T3 by 36.5% ($\beta \pm SE = 2.376 \pm 0.103$, 2.011 ± 0.098 respectively). At T4, CRF decreased by 79% from T3, and 46% below baseline levels ($\beta \pm SE = 1.22 \pm 0.084$, 1.682 ± 0.087) in the total population. The younger group reported greater CRF than the older group at both T1 ($\beta \pm SE = 2.380 \pm 0.120$ vs. 1.976 ± 0.120 ; $p = 0.047$, 95% C.I. 0.005, 0.804) and at T2 ($\beta \pm SE = 2.645 \pm 0.140$ vs. 2.120 ± 0.140 ; $p = 0.025$, 95% C.I. 0.068, 0.982).

Conclusion: Patients with breast cancer receiving radiation therapy experienced the most CRF symptoms before and immediately after radiation therapy. Symptoms decreased to below baseline levels one month after radiation treatment. Younger patients reported greater symptoms than older patients. Age and proximity to treatment are factors in patient-reported symptoms.

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MEETING CHALLENGES OF CANCER-RELATED DISTRESS VIA WEB-BASED SELF-MANAGEMENT: ONLINE PSYCHOEDUCATIONAL PROGRAM USE ANALYSIS

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Available resources and patient acceptance of clinical management for cancer-related distress pose ongoing challenges. Unguided, web-based psychoeducational interventions are an attractive option offering low resource utilization and easy patient access. Engaging patients meaningfully in such programs requires greater understanding of patients' use patterns. This analysis evaluated how women newly diagnosed with breast cancer used the unguided web-based, psychoeducational distress self-management program CaringGuidance™ while enrolled in a randomized pilot clinical trial.

Method: Women with stage 0 - II breast cancer diagnosed in the prior three months were randomized to 12-weeks of unguided CaringGuidance use versus usual care alone. Weekly email reminders, informational emails after cognitive-behavioral exercise views, and emails rewarding hours of use prompted the intervention group. The CaringGuidance analytics system collected user frequency, duration, and activity automatically, directing it to the CaringGuidance database. Data were collected on log-ins, sessions, and page view frequency, duration of sessions, total duration, and program components viewed (i.e. activity). Psychosocial variables were assessed at baseline and monthly.

Results: Complete program use data are available for 54 subjects. Of these subjects, 70% logged-in in all study months ($n = 38$), 28% ($n = 15$) were intermittent-users, and ($n = 1$) was a non-user. Initial analysis reveals that users logged-in a Mean 15.6 (SD = 9.9) times for a Mean 16.9 (SD = 10.4) sessions. Users accessed CaringGuidance 9 – 1265 total minutes ($M = 4.97$ hours SD = 3.4). Nine users (17%) accessed the program for the suggested total duration (480 – 1080 minutes). As expected, users' mean use-duration declined significantly over the 12 weeks ($F(2,104) = 40.21$, $p < .001$). Use-duration was not associated with psychosocial outcomes. However, users' 12-week program activity showed that fewer program component views by users was moderately associated with more month 3 depressive symptoms ($r = -.243$, $p = .096$) and intrusive/avoidant thinking ($r = -.237$, $p = .118$), but this did not reach statistical significance in this small sample.

Conclusion: CaringGuidance was used at least intermittently by 98% of assigned women when introduced within 12 weeks of breast cancer diagnosis. Program use predictively declined over 12 weeks of unguided access but taken with user satisfaction and initial efficacy reported previously, it is promising that reduced distress may be moderately associated with greater program activity.

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POST TRAUMATIC STRESS DISORDER (PTSD) AND POST TRAUMATIC GROWTH (PTG) IN HISPANIC BREAST CANCER PATIENTS.

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Background: Cancer patients have a higher risk of experiencing PTSD than those patients without a cancer diagnosis. Exposure to psychosocial traumatic events is a well-known risk factor to systemic inflammation among the general population and post-traumatic growth (PTG) is known to be a protective factor. However, little is known about the relationship among PTSD, (PTG) and inflammation in Hispanic BC patients.

Method: This is a secondary preliminary data analysis of a pilot study aimed at exploring the rates of depression, early life stress and its relationship with inflammatory markers of BC tumor microenvironment. Recruitment is still ongoing (total n=32) and will be completed by January 2019. Participants are recruited before undergoing BC tumor surgery. Patients complete a package of surveys through interviews that includes measures of PTSD and PTG. Pearson Correlation Tests were used to explore correlation between the variables of interest. Tumor infiltration of pro-inflammatory macrophages will be assessed after completing recruitment.

Results: Preliminary data (n=20) show women mean age being 63years (SD:10.3). Sixteen participants (80%) reported experiencing trauma before the cancer diagnosis while four (20%) reported the cancer diagnosis as their experienced trauma. Descriptive analyses reveal that 30% of participants experienced re-experimentation of the trauma, 45% showed avoidance and 25% demonstrated cognitive alterations, negative thought and an increase in physiological reactivity. Also, 75% of participants showed significant symptomatology in at least one PTSD symptom while 100% reported significant scores of PTG after their traumatic event. These findings will be correlated with the biological data to explore associations among PTSD, PTG and BC tumor inflammation markers.

Conclusion: Little is known about the relationship between PTSD, PTGI and tumor inflammation, but from our analysis we can infer that there is a high rate of PTSD symptomatology in the study sample.

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SUBJECTIVE SLEEP QUALITY AMONG PATIENTS WITH CANCER AND COMORBID DEPRESSION

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Introduction: Poor sleep has deleterious impacts on quality of life and treatment tolerance for patients with cancer, and it may place patients at increased risk for depression or exacerbation of mood symptoms. Diagnoses of cancer and depression are independent predictors of poor sleep quality, but less is known about subjective sleep quality among patients with both of these potential risk factors. This study examined the frequency and correlates of poor subjective sleep quality among patients with cancer enrolled in the Collaborative Oncology Project to Enhance Depression Care (COPE-D), a collaborative care intervention to treat depression among patients with cancer.

Methods: Subjects were 56 adult cancer survivors enrolled in COPE-D. Patients self-reported demographic and clinical characteristics (e.g. race/ethnicity, cancer type and stage, treatment status). Prior to intervention, sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI), general health status was measured using the PROMIS Global-10, social isolation was measured using the PROMIS Social Isolation- 4a, and depressive symptoms were measured using the 9-item Patient Health Questionnaire (PHQ-9).

Results: 94.6% of patients reported poor sleep quality (PSQI global scores ≥ 5) and 82% reported significantly poor sleep quality (global scores ≥ 8). Sex, primary language, race/ethnicity, employment status, cancer stage, cancer type, current chemotherapy, current radiation, and current anti-hormonal therapy were not significantly associated with poor sleep quality (p 's $> .05$). Markers of lower SES were associated with poor sleep, with patients reporting educational attainment of high school or less and those reporting annual incomes less than \$50,000 also reporting worse sleep quality (p 's $< .05$). Worse global mental ($r = -.37$, $p < .01$) and physical health ($r = -.48$, $p < .01$) were associated with poor sleep quality. Depressive symptoms and social isolation were not significantly associated with poor sleep quality (p 's $> .05$).

Conclusions: Cancer patients seeking treatment for depression report very high rates of poor sleep quality, with lowest SES patients reporting the worst sleep quality. Given the prevalence of significant sleep disturbance in this population, integrating principles of cognitive behavioral therapy for insomnia (CBT-I) into collaborative depression care may improve patient outcomes.

Funding: Merck Foundation Alliance to Advance Patient-Centered Cancer Care

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INTUITIVE INTERNET INTERVENTIONS: A QUALITATIVE STUDY OF WEB-BASED BEHAVIORAL SUPPORT FOR MEN WITH PROSTATE CANCER

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Background: Exercise and healthy diet can improve quality of life and prognosis in prostate cancer survivors, but there have been limited studies on the feasibility of web-based lifestyle interventions. In this report, we used qualitative methods to explore barriers to engagement with web-based behavioral support among men with prostate cancer who participated in a 12-week technology-based lifestyle intervention designed to support them in adopting healthy diet and exercise behaviors.

Methods: We conducted a 4-arm pilot study of men with prostate cancer (N=200) who received progressive levels of behavioral support (Level 1: website; Level 2: website with individualized diet and exercise recommendations; Level 3: website with individualized diet and exercise recommendations, Fitbit and text messages; and Level 4: website with individualized diet and exercise recommendations, Fitbit and text messages, phone call with an exercise trainer and phone call with a registered dietitian). We aimed to determine feasibility and estimate effects on lifestyle behavior; following the 12-week intervention, we held focus groups with volunteers from each of the four study arms. Here we conducted grounded theory analyses, including open, axial, and selective coding to generate codes and themes. Categories were refined across levels using embodied categorization and constant comparative methods.

Results: In total, 20 men with prostate cancer participated in the focus groups, with n = 5, 4, 5, and 6 in groups 1-4 respectively. While participants had varied familiarity with technology and expectations for the intervention, they converged on a number of concerns and preferences. We identified five common factors in participation, including: 1) individual preparedness (tech literacy, health literacy, readiness to change, and trust); 2) power dynamics (disconnect with past health experiences, guilt about non-adherence, comparison to other programming—technology, websites, devices); 3) environmental factors (competing priorities, home environment); 4) program design (framing expectations, flexibility/customizability); and 5) program support (educational, emotional).

Conclusions: These analyses suggest that a well-framed web intervention for men with prostate cancer needs to address disparities in technology and health literacy, mitigate power dynamics, and navigate friction from competing environmental factors. Through flexible and transparent web design, integration of key stakeholders (i.e. providers, family members), and effective coaching, web-based interventions may become a valuable tool to support prostate cancer survivorship.

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PATIENT-REPORTED FINANCIAL TOXICITY AMONG INSURED CANCER SURVIVORS

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Purpose: Fighting cancer is a costly battle, and understanding of the relationship between patient-reported financial toxicity (FT) and health outcomes can help inform interventions for post-treatment cancer survivors.

Methods: Stage I-III solid tumor, insured cancer survivors (N=103) completed a phone survey addressing FT (as measured by the standardized COverprehensive Score for financial Toxicity (COST) measure) and clinically relevant health outcomes (health-related quality of life [HRQOL] and adherence to recommended survivorship health behaviors). Univariate and multivariate analyses were used to assess demographic and disease-specific correlates of FT, along with the predictive value of FT on HRQOL and health behavior outcomes.

Results: Approximately 18% of respondents noted FT levels associated with significant financial burden. Greater FT was associated with Hispanic ethnicity, younger age, unpartnered status, non-retirement, lack of private insurance, lower level of educational attainment, and lung cancer (v. other solid tumor diagnoses). Greater FT was a meaningful predictor of increased anxiety, increased fatigue, and impaired physical functioning, even after controlling for relevant demographic and disease characteristics.

Conclusions: Although overall levels of FT were lower among cancer survivors in our sample compared to active treatment patients assessed in previous studies, financial burden continued to be a concern for a significant minority of cancer survivors and was associated with components of reduced HRQOL. Incorporation of FT assessment into survivorship care planning could enhance clinical assessment of survivors' FT vulnerability, help address the dynamic and persistent challenges of survivorship, and identify those most in need of intervention across the cancer care continuum.

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6:15 PM-7:30 PM

PARENT AND CHILDHOOD CANCER SURVIVOR EXPERIENCES WITH AND BARRIERS TO HPV VACCINATION

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Background: Childhood cancer survivors have lower HPV vaccination initiation rates than the general population (24% vs. 41%). HPV-associated cancers are 40% higher among female survivors of childhood cancer and 150% higher among male survivors compared to the general population. Improving HPV vaccination uptake among childhood cancer survivors is essential to improving their health outcomes. We conducted semi-structured interviews with adult survivors of childhood cancer and parents of younger survivors to evaluate their experiences with the HPV vaccine, barriers to HPV vaccination, and recommendations on how to promote survivor completion of the vaccine series.

Methods: Eligible survivors were ages 18-26 years, treated at Primary Children's Hospital (PCH) or Huntsman Cancer Institute between 2013-2018, had completed treatment, and were age eligible for the HPV vaccine. Eligible parents were at least 18 years of age, and the parent of a survivor under age 18 years who received treatment at PCH between 2013-2018, were done with treatment, and were age eligible for the HPV vaccine. Interviews were recorded, transcribed, coded and qualitatively analyzed using thematic content analysis.

Results: Survivors (N=10) were primarily female (60%), non-Hispanic white (90%), and on average 21.2 years of age (range 18-23). Half were HPV vaccinated (50%). Parents (N=10) were female (90%), ages 30-59 years (60%), and non-Hispanic white (80%). Of parents, 30% reported their child with cancer had received the HPV vaccine. Among those vaccinated (n=8), 100% reported that a healthcare provider recommended the vaccine, whereas among the n=12 unvaccinated, only 1 (8.3%) reported receiving a provider recommendation. Four distinct themes emerged about experiences with and barriers to HPV vaccination. First, survivors and parents reported that they lacked adequate information on the vaccine, which limited their ability to decide whether to get it. Second, among those who had been vaccinated, this was due to high trust in their providers who recommended the vaccine. Third, unvaccinated survivors or their parents felt that receiving a recommendation for the HPV vaccine by their oncologist was essential, as oncologists understand complex medical histories due to cancer better than primary care providers. Fourth, participants generally felt that reminders about the vaccine via mechanisms like text and emails would be helpful and result in getting vaccinated.

Conclusions: HPV vaccination is an important opportunity to prevent second cancers in young cancer survivors. Our results demonstrate that oncologists play an essential role in recommending the vaccine and providing vaccine information to assist childhood cancer survivors and their families with decision-making about the vaccine. At the same time, reminder systems are necessary to help survivors to complete the multi-dose HPV vaccine series.

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COGNITIVE-BEHAVORIAL EFFECTS ON ACROPHASE AND MORNING DISTRESS IN GYNECOLOGIC CANCER

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Background: Rest-activity circadian rhythms assist in maintaining the body's 24-hour internal clock contributing to consistent sleep and wake times across days. Acrophase is one construct of circadian rhythms which assesses the actual clock time of peak activity during the day. Within cancer populations, earlier acrophase values have been associated with less anxiety, fatigue, older age, and better quality of life. This study examined the effects of a 6-week individual Cognitive-Behavioral Therapy intervention for insomnia and pain (CBTi.p.) on acrophase in women with gynecologic cancer.

Methods: Participants were 35 women (*M* age=59.43, *SD*=11.18) with clinically significant insomnia and gynecologic cancer enrolled in a randomized clinical trial examining CBTi.p. (*N*=18) versus Psychoeducation (*N*=17) effects on sleep, pain, mood, and stress hormones/cytokines. Daily acrophase was calculated from 14 days of wrist-worn actigraphy and sleep diaries collected at pre-intervention (T1), post-intervention (T2), and 6-8 week follow-up (T3). Acrophase was calculated by recording the most active hour occurring throughout the day as indicated by actigraphy. Morning distress, fatigue, and pain unpleasantness were obtained through daily ratings on a visual analog scale.

Results: Mixed linear models were used to examine the effect of CBTi.p. on daily acrophase. More advanced cancer stage (*b*=-.350, *p*=.047), older age (*b*=-.077, *p*=.001), and less morning distress (*b*=.037, *p*=.028) were associated with lower acrophase values. Women randomized to CBTi.p. had significantly lower acrophase values (*b*=-.011, *p*=.030) across days from pre-intervention through T2 and T3 compared to women randomized to Psychoeducation. Morning ratings of fatigue and pain unpleasantness were not significant predictors of acrophase in this sample. The overall model explained 3.3% of the within-person variance and 25.5% of the between-person variance in acrophase.

Conclusions: These results suggest that a 6-week individual CBTi.p. intervention reduced acrophase, a measure of circadian rhythm, in women with gynecologic malignancies and clinically confirmed insomnia. Future research should explore these relationships within a larger sample of gynecologic patients as well as in diverse cancer populations.

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AN INFORMED/SHARED DECISION-MAKING APPROACH FOR PROSTATE CANCER SCREENING IN MEMBERS OF THE WORLD TRADE CENTER HEALTH PROGRAM

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Background: First-responders to the World Trade Center (WTC) attacks have an increased risk for developing prostate cancer (PC). PC screening, however, is not part of their annual monitoring visit through the WTC Health Program (WTCHP). The goal of this project is to present data on: (1) knowledge of PC among WTCHP members, (2) the development of a tailored brochure for PC screening for WTCHP members, and (3) feasibility and acceptability of an informed/shared decision making approach from the clinician perspective.

Method: Twenty members of the WTCHP were recruited for 6 focus groups to provide their level of knowledge about PC, and feedback on the American Cancer Society's PC screening brochure. Separately, clinical providers (physicians, PAs, nurses; $n=7$) were asked to provide suggestions for content, comment on the feasibility and acceptability of the implementation of the shared decision protocol, and communicate training needs.

Results: From the focus groups' transcripts, several themes emerged: (1) high interest in PC screening, (2) minimal knowledge of higher susceptibility of PC for WTC first responders, (3) confusion about the cons of PC testing, and (4) uncertainty about the next steps following a positive screening result. Feedback on the existing ACS screening brochure consisted of: (1) the need for more tailored statistics and facts about the risks of PC, (2) more information on the cons of testing, (3) testimonials of men who had screening with positive/negative results, (4) a frequently asked questions section, and (5) targeted illustrations relevant to first responders. Clinical providers stated a need for communication examples to engage in shared decision making with their patients, but they were also concerned about the additional time the protocol would take. Additional training of providers was suggested to minimize time of implementation.

Conclusions: Overall, the tailored brochure and shared decision protocol was feasible and acceptable after incorporating all stakeholders recommendations into the program. Next steps include disseminating the tailored PC screening brochure to WTC first responders, and assessing PC screening uptake/rejection and the psychosocial environment in which these decisions are made.

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IMMIGRANT STATUS, RACE AND SMOKING BEHAVIORS IN WOMEN DIAGNOSED WITH BREAST CANCER

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Background: Cigarette smoking has been shown to be associated with elevated risk of breast cancer (BC) mortality among women diagnosed with BC. Differences in smoking behaviors have been documented by immigration status and race. However, no prior work has examined how smoking behaviors differ by immigrant status in women with BC.

Objective: We evaluated the associations between immigrant status (foreign- or US-born), race, and smoking behaviors in a pooled cohort of Latina, Asian/Pacific Islander (API), and non-Latina White (NLW) women diagnosed with BC.

Methods: We included 6,045 Latina ($N=691$, 39.1% immigrant), API ($N=704$, 72.7% immigrant), and NLW ($N=4,650$, 8.2% immigrant) women diagnosed with BC who participated in the Kaiser Permanente Northern California prospective Life After Cancer Epidemiology (LACE) and Pathways Study cohorts. We used logistic regression to evaluate associations of immigrant status and race/ethnicity with current smoking. Among ever smokers ($N=2,663$), we used linear regression to evaluate associations with pack-years (PY) of smoking. We controlled for age at diagnosis, days between diagnosis and study enrollment, education, body mass index (BMI), and moderate/vigorous MET-hours of physical activity.

Results: Immigrant women were less likely to be current smokers (odds ratio (OR)=0.49, 95% confidence interval (CI):0.31-0.78) than were non-immigrants. Latina (OR=0.51, 95% CI:0.32-0.82) and API (OR=0.52, 95% CI:0.29-0.93) women were less likely to be current smokers than were NLW women. The associations between immigrant status and current smoking were similar across race/ethnic groups (p -interaction=0.76). Among ever-smokers, immigrant women smoked 4.73 (95% CI:2.25-7.21) fewer PY than did non-immigrants. Latina women smoked 7.35 (95% CI:4.62-10.07) and API smoked 4.31 (95% CI:0.56-8.07) fewer PY than did NLW women. The associations between immigrant status and smoking PY were similar across race/ethnic groups (p -interaction=0.87).

Conclusions: Among Latina, API, and NLW women diagnosed with BC, those who were immigrants were less likely to be current smokers and smoked fewer PY than US-born women.

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INDOOR AND OUTDOOR TANNING AMONG UNITED STATES ADULTS: RESULTS FROM THE 2018 HEALTH INFORMATION NATIONAL TRENDS SURVEY

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Introduction: Tanning behaviors increase risk for skin cancers, the most common malignancies in the US. While indoor tanning is waning in the US, comparatively less is known about current rates of outdoor tanning, as well as demographic patterns.

Purpose: To examine rates of indoor and outdoor tanning in US adults, the relationship between these two types of tanning, and gender and age differences.

Method: Data were obtained from the National Cancer Institute 2018 HINTS survey of US adults. Indoor tanning was measured using the open response question, “In the past 12 months, how many times have you used a tanning bed or booth?” Outdoor tanning was measured using the question, “On warm sunny days, how often do you spend time in the sun in order to get a tan?” Response options included often, sometimes, rarely, never, and don’t go out on sunny days. SAS 9.4 programming was used to account for sample weighting to achieve representation of the US non-institutionalized adult population.

Results: The sample consisted of 3255 adults who responded to both tanning questions. Only 3.9% reported indoor tanning in the past year. In contrast, rates of outdoor tanning were substantial; 8.8% reported tanning outdoors “often,” and 17.6% “sometimes.” Indoor and outdoor tanning are related ($r = .15$, $p = .02$), with 26.9% of recent indoor tanners reporting outdoor tanning “often” and 38.2% “sometimes.” There were no significant differences in tanning frequency by age or gender.

Discussion: About one quarter of US adults tan outdoors at least sometimes. Few individuals tan indoors, but indoor tanners often engage in outdoor tanning as well. Tanning is evident across gender and all ages, indicating a need for public health intervention approaches, and emphasis on avoidance of outdoor as well as indoor tanning. Indoor tanning cessation efforts should address the harms of outdoor tanning. This descriptive research provides a snapshot of adults’ tanning behaviors, and the pervasiveness of outdoor compared to indoor tanning in 2018.

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ADVANCED CANCER PATIENT AND CAREGIVER INTERACTIONS: A QUALITATIVE ANALYSIS OF PROTECTIVE BUFFERING

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The social-cognitive processing model suggests communication can be beneficial in processing stressful events, such as cancer diagnosis and treatment. However, research indicates that protective buffering (PB), or avoiding communication in order to protect another’s emotions, is common among couples. The goal of this study was to qualitatively describe PB of cancer-related concerns in patient-caregiver dyads.

Eleven advanced cancer patients and their family caregivers ($n=22$) participated in individual interviews about their cancer-related communication with each other. Interview transcripts were analyzed using a theoretically-guided coding strategy to identify examples of how caregivers and patients described sharing and PB related to cancer.

Patients were on average 39 years old. Most (80%) were diagnosed with stage IV cancer and had received palliative care consultation. Caregivers were on average 43 years old; 82% were the patient’s spouse. All participants were white. Although all participants reported at the beginning of the interview they felt comfortable discussing anything with the other dyad member and did not hold anything back, aspects of PB were identified in 9 interviews (5 caregivers, 4 patients; 2 from the same dyad). Three caregivers reported avoiding communication about the potential for patient decline and end-of-life, and one reported avoiding discussing how the cancer diagnosis had impacted them personally. Patients mostly reported having open cancer discussions, but two reported avoiding communication in order to alleviate caregiver responsibilities. Patients also reported *caregivers* avoided discussions about cancer in general and two reported caregivers avoiding end-of-life specifically. Patients and caregivers who reported avoidance recognized that that the lack of communication was unhealthy for the relationship, though sometimes temporary avoidance was useful. For instance, one caregiver describes waiting until the patient felt bad during chemo to have difficult conversations so as to not “ruin the good days”.

These data demonstrate that PB is prevalent and that dyads engage in PB to avoid discussing patient decline, end-of-life, or burdening the other. This avoidance potentially has both adaptive and maladaptive uses between patients with advanced cancer and caregivers. Providing safe places and times to hold conversations about sensitive topics should be considered for inclusion within cancer treatment and provider care.

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PRELIMINARY FINDINGS ON HRV AND STRESS RELATED TO BODY FAT % IN A TAI CHI EASY/QIGONG INTERVENTION FOR BREAST CANCER SURVIVORS

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Background: The numbers of breast cancer survivors has risen to 3.6 million this year. With a concomitant high prevalence of weight gain post-treatment, interventions that address body composition are important to examine in this population. Meditative Movement practices such as Tai Chi, Qigong and Yoga (incorporating body movement or postures, a focus on the breath, and a meditative state) have been shown to reduce weight and/or body fat under certain circumstances and this change may be related to reductions in stress.

Method: In the context of a larger, on-going randomized controlled trial testing effects of an eight-week, weekly Tai Chi Easy/Qigong (TCQ) intervention compared to an education control group on breast cancer survivors, age 45-75 years, we examined stress and a neurophysiological marker of stress, heart rate variability (HRV), in relationship to reduction in body fat percentage (BF%). EmWave Pro equipment with earlobe sensors captured HRV parameters. Tanita scales (using bioelectrical impedance) were used to assess BF%. The first 32 completers in TCQ (n=18) and education (EDU, n=14) were compared (t-tests) for changes in body fat percentage (BF%). Linear regressions were used to examine HRV parameters and stress (using the Perceived Stress Scale) relationships with BF%.

Results: All 32 participants were female breast cancer survivors, mean age 60.03 years. (sd 7.39), nine (23.3%) Latina, with the remaining Non-Hispanic White. No significant difference was found between study arms for BF%, but changes were in the expected direction (reduced for TCQ and increased in EDU). Decreased stress and improved HRV parameters (normalized coherence and total power, both frequency domain parameters) were significantly associated with reduction in BF% ($R=.526$; Adj $R^2=.199$, df 3, $F=3.563$; $p=.027$).

Conclusion: Changes in BF% in response to a Meditative Movement program over eight weeks for breast cancer survivors may be partially due to the overall reduction in stress. A key potential mechanism for understanding more about how TCQ (and Meditative Movement practices in general) may achieve results in body composition is HRV, particularly the parameters associated with changing the set-point in stress reactivity, such as coherence and total power in the frequency domain.

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THE RELATIONSHIP BETWEEN MODERATE TO VIGOROUS PHYSICAL ACTIVITY AND MORTALITY IN ENDOMETRIAL CANCER SURVIVORS

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Background: Physical activity has been shown to reduce risk of death in those with breast and colorectal cancer, but there is insufficient evidence for this relationship in endometrial cancer survivors. Physical activity fluctuates throughout the life course, which makes measurement challenging and may influence the risk of mortality outcomes. The purpose of this study was to describe the relationship between reported physical activity and death in a population-based study of endometrial cancer.

Methods: Data were drawn from the Wisconsin Women's Health Study. Women participated in a telephone risk factor-based interview after identification by the state-wide cancer registry within 1 year of a diagnosis of endometrial cancer in 1992-95. Participants (87% of eligible) reported the frequency of moderate and vigorous physical activity performed at ages 12 and 20, and activities completed 5 years before cancer diagnosis. Death, including attributable cause, was ascertained via linkages with the National Death Index through 2016. Analyses used Cox proportional hazards regression in models of all-cause mortality, adjusted for age at diagnosis, body mass index, current cigarette smoking and stage of disease.

Results: Participants (n = 760) were, on average, 63.0 (\pm 7.0) years old at diagnosis, with mean BMI of 29.3 (\pm 7.0) kg/m². Most (60.4%) participants were deceased by 2016 with mean follow up time of 7.0 (\pm 4.2) years. Frequency of physical activity was highest at age 12, with mean reports of moderate activity of 4.3 (\pm 3.0) times per week and vigorous activity 1.7 (\pm 2.7) times per week. The adjusted hazard ratio of death associated with moderate and vigorous intensity physical activity 5 years before diagnosis was 0.99 (95%CI: 0.96-1.04) and 1.03 (95%CI: 1.03-1.12), respectively. Hazard ratio estimates for physical activity at ages 12 and 20 were similarly null.

Conclusions: After adjusting for known confounders, self-reported moderate and vigorous physical activity was not associated with all-cause mortality. Since physical activity was reported as intensity frequency per week, additional analyses will include a repeated measures approach with more sophisticated models to better describe the association of physical activity at different ages with endometrial cancer survival.

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EFFECT OF A MULTILEVEL EHR-INTEGRATED PHYSICAL ACTIVITY INTERVENTION ON QUALITY OF LIFE AND SLEEP IN CANCER SURVIVORS

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Objectives: Cancer survivors commonly experience psychosocial and physical distresses that negatively affect quality of life. This pilot trial tested the effect of adding a multi-level, technology-based physical activity intervention module to a standard survivorship care plan for breast and colorectal cancer survivors. The objective of this study was to determine whether the physical activity module improved psychosocial and health related quality of life outcomes relevant to survivorship.

Methods: This pilot study enrolled fifty breast and colorectal cancer survivors, each enrolled alongside a support partner. Half of the dyads were assigned to receive a survivorship care plan augmented with a 12-week multicomponent physical activity module that included a Fitbit tracker (with data integrated into the electronic health record) and customized email feedback. The comparison group received the standard survivorship care plan alone. Outcomes were the SF-36, social support as measured by the ISEL, PROMIS sleep measures and physical activity beliefs. Data were analyzed using linear mixed modeling.

Results: Cancer survivors were aged 54.4 ± 11.2 years and were 2.0 ± 1.5 years since diagnosis. Relative to those in the comparison group, the intervention group experienced improved physical health ($p=0.12$, effect size: $d=0.39$), mental health ($p=0.06$, $d=0.59$), sleep impairment ($p=0.04$, $d=0.62$), and exercise self-efficacy ($p=0.03$, $d=0.60$).

Conclusion: The intervention delivered meaningful improvements in mental health and sleep impairment of the cancer survivors. If replicated in a larger sample, this study demonstrates that scalable, technology-supported interventions may be an efficacious and practical strategy for improving psychosocial health and health related quality of life of cancer survivors.

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A PILOT IPOD AND MINDFULNESS-BASED INTERVENTION: DEPRESSIVE SYMPTOMS, BIOMARKERS, AND SURVIVAL AMONG LUNG CANCER PATIENTS

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Lung cancer patients experience elevated rates of depressive symptoms, which has been linked to dysregulated neuroendocrine and telomere biology, and earlier mortality. Given that many cancer patients face considerable burden, identifying interventions that are efficacious and feasible remains a priority. Thus, the primary aim of the current investigation was to pilot an iPod and mindfulness-based intervention (MBI), as MBIs have been shown to reduce depression and improve related outcomes among patients with cancer.

Non-small cell lung cancer patients ($N = 67$) diagnosed within 5 years reported on depressive symptoms, provided a blood sample for leukocyte telomere length (LTL) assessment, and collected saliva samples morning and evening across multiple days for cortisol assessment at baseline and follow-up. Patients were invited to complete an optional 3-month iPod and MBI between baseline and follow-up that involved listening to audio tracks adapted from the mindfulness-based stress reduction program; 25 patients completed the intervention. Patient's survival status was tracked. After controlling for baseline differences, ANCOVAs were used to test for differences in the slope of change in depressive symptoms, LTL, and diurnal cortisol profiles between groups. Kaplan-Meier analyses were conducted to examine the association between intervention use and survival. *Post-hoc* Cox Proportional Hazard regressions were used to test the association between change in LTL and survival to elucidate findings.

Results revealed the intervention was associated with an increase in depressive symptoms ($F(1,54) = 5.360$, $p = .024$, partial $\eta^2 = 0.090$; intervention: $M = .035$, $SE = .084$; non-intervention: $M = -.005$, $SE = .047$) and LTL ($F(1,34) = 5.454$, $p = .026$, partial $\eta^2 = 0.138$; intervention: $M = .0000423$, $SE = .000725$; non-intervention: $M = -.000327$, $SE = .000437$), after adjusting for chemotherapy at baseline, and shorter survival calculated from study entry ($p = .019$) and date of diagnosis ($p = .014$). *Post-hoc* analysis revealed longer LTL was associated with shorter survival calculated from date of study entry ($P(\text{Wald}) < .01$) and date of diagnosis ($P(\text{Wald}) = .026$), after controlling for the intervention.

Although results should be interpreted cautiously due to study limitations (i.e., small sample size, non-randomized design), the pilot intervention yielded unexpected associations that warrant further consideration. Results also suggest that longer, opposed to shorter, LTL may be prognostic for earlier mortality in this population.

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EXPERIENCES OF AFRICAN-AMERICAN PROSTATE CANCER SURVIVORS: A META SYNTHESIS AND LITERATURE REVIEW

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Introduction: African-American men have about a 15 percent chance of developing prostate cancer, compared to about 10 percent chance for white men and more likely to die from the disease than white men - 4 percent versus 2 percent respectively. African American men who are already in a high-risk group for prostate cancer than their white counterparts are also at higher risk for post-treatment symptom distress and poor quality of life with lower survival rates.

The aim of this review is to synthesize the current literature on post-treatment survivorship experiences of African American men with prostate cancer. A full analysis of the current research will add a comprehensive guide to the current knowledge base and make recommendations for future studies.

Method: A health sciences librarian developed and ran extensive literature search in five data bases in September 2018: PubMed, CINAHL Plus with Full Text, PsycINFO (EBSCO), Web of Science, and Social Sciences Abstract (ProQuest). Searches in PubMed, CINAHL, and PsycINFO used keywords and controlled vocabulary terms (MeSH in PubMed, CINAHL Headings in CINAHL, Thesaurus of Psychological Index Terms in PsycINFO) for the following concepts: African-Americans, prostate cancer survivors, localized disease, and marital/relationship status. Searches in Web of Science and Social Sciences Abstract used keywords only. We identified 13 relevant studies published from 2008 to 2018 and did the quality appraisal using the validated Critical Appraisal Skills Program. We used Noblit and Hare's meta-ethnographic approach to analyze and synthesize the qualitative studies. We also analyzed quantitative studies related to the findings of the qualitative studies to add to the robustness of the meta-synthesis.

Results: Four major themes with eight sub-themes emerged from the analysis. The 4 major themes were - Coping strategies (spirituality, healthy behaviors, spouse/family support, and non-disclosure), Psycho-physical impacts (physical well-being, masculinity and self-esteem), Health system influence (treatment decision-making, healthcare provider influence), and socioeconomic impact.

Discussion/Conclusion: Our findings reveal that the experiences of African-American prostate cancer survivors are multiplex, related to their culture and socioeconomic context. This review highlights the need for studies with unpartnered African-American prostate cancer survivors to specifically explore and identify their unmet needs.

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ANODYSPAREUNIA IN GAY AND BISEXUAL PROSTATE CANCER SURVIVORS

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Introduction: The incidence of sexual dysfunction resulting from prostate cancer treatments is well established; however, sexual functioning is almost always operationalized as erectile function or as erections sufficient for vaginal intercourse. For many gay and bisexual men (GBM), receptive anal intercourse (RAI) is a common sexual behavior, but the effects of treatment have not been studied. Anodyspareunia is recurrent or persistent clinically significant pain experienced during receptive anal intercourse. It is estimated that 10-14% of GBM experience anodyspareunia and the majority of these cases describe the problem as lifelong. As the first study of anodyspareunia in this population, our objectives were: (1) to describe the prevalence of anodyspareunia in a sample of GBM prostate cancer survivors and, (2) to evaluate the degree to which anodyspareunia is associated with health-related quality of life.

Methods: Data were from the Restore-1 study, a cross-sectional online survey of 193 GBM in the U.S. or Canada who were treated for prostate cancer. For treatment, 53% had received surgery, 19% radiation, and 29% a combination of treatments. Average age and time since diagnosis were 63.4 (SD=8.2) and 5.63 (SD=4.6), respectively. Simple linear regression was used to evaluate associations between anodyspareunia, treatment type, past behavior, and the SF-12 Physical/Mental scales.

Results: There were 55 (28.5%) men who attempted RAI in the previous month. Approximately 29.1% reported severe anal pain (i.e., anodyspareunia) sufficient to stop intercourse. There was a significant association between anodyspareunia, pre- and post-treatment ($b=16.7$, $p=.01$). Of the 110 men who reported pleasurable RAI in the year prior to their prostate cancer diagnosis, 47 (42.7%) reported attempting RAI in the past month. Of these, 10 (21.3%) also reported anodyspareunia, which was negatively associated with the SF-12 Mental Component Score ($b=-8.8$, $p=.02$). Anodyspareunia did not differ by treatment received.

Conclusions: RAI was a common sexual behavior among a subset of GBM prostate cancer survivors. Anodyspareunia was higher among this group than in other populations, although not associated with treatment type. Culturally responsive cancer care for GBM should consider changes to RAI and its potential association with quality of life.

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PERSPECTIVES OF GHANAIAAN HEALTH CARE PROVIDERS ON HPV VACCINATION: A QUALITATIVE STUDY BASED ON MULTI-THEORY MODEL

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Introduction: Human Papillomavirus (HPV) vaccination is effective in preventing cervical cancer. However, HPV vaccination awareness and vaccination rates in Ghana are low and these factors have contributed to high rates of cervical cancer in the country. Typically, healthcare providers (i.e. physicians and nurses) are responsible for counseling and/or educating adolescents and parents about the HPV vaccination but little is known about the Ghanaian health care providers' attitudes and beliefs concerning HPV vaccination.

Purpose: The purpose of this study was to examine Ghanaian healthcare providers' perceptions and attitudes towards HPV vaccination and their vaccination recommendation behaviors.

Methods: We conducted three, sixty-minute focus group discussions with health care providers in the second-largest government hospital in Ghana. Sixteen semi-structured open-ended questions were used to guide the focus group discussions with additional follow-up questions added for clarifications. We explored general knowledge about HPV, vaccination recommendation behavior, physical environment, and socio-cultural factors associated with the HPV vaccination among the providers.

Results: The sample (n=29) included physicians (n=9), nurses (n=8), immunization field officers (n=5), and other healthcare professionals (n=7). The participants consisted of male (n=15) and females (n=14) between the ages of 29 and 42 years. Our analyses showed that healthcare providers rarely offer HPV vaccination recommendations because (a) physicians attend to acute illness and have limited time to discuss preventive care, including vaccination, with patients; (b) vaccines are delivered as community medicine where mobile clinics are delivered to the communities to vaccinate children in those communities; and (c) the concepts of routine medical checkup and preventive medicine, such as HPV vaccination, are not well integrated into the Ghana health care system. Additionally, we found (a) low urgency for HPV vaccination education programs due to competing priorities such as malaria and HIV/AIDS; (b) lack of awareness about the mechanism, safety, and efficacy of HPV vaccination; (c) lack of HPV vaccine accessibility (i.e. availability and affordability); and (d) stigma, misconceptions and religious objections associated with the vaccine (primarily, that it promotes promiscuity).

Conclusion: The findings of our study underscore the need for a comprehensive HPV vaccination program in Ghana. The program should be designed to (a) equip health care providers and the community with knowledge about the efficacy of HPV vaccination to prevent cancer, (b) address transportation issues for both vaccination delivery and access, and (c) address HPV vaccination-related stigma to increase vaccination uptake.

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PHYSICAL ACTIVITY TRAJECTORIES FROM PRE- TO POST-CHEMOTHERAPY IN CANCER PATIENTS COMPARED TO CONTROLS IN A NATIONWIDE STUDY

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Objective: Physical activity (PA) has been consistently associated with improved physical function, quality of life, and survival during cancer survivorship; however, patterns of PA before, during, and after chemotherapy, as well as how these changes may differ from the general population, have not been fully characterized. We therefore examined PA levels and changes among patients with breast cancer (BC) undergoing chemotherapy compared to age-matched, non-cancer controls.

Methods: PA was measured using the leisure time physical activity questionnaire from the Aerobics Center Longitudinal Study at pre-chemotherapy (T1), post-chemotherapy (T2), and 6-months post-chemotherapy (T3). PA was categorized to all activities, exercise, and household activities in total minutes and Metabolic Equivalent Task (MET) hours/week. Participants were classified as meeting PA guidelines if they reported at least 150 minutes per week of moderate to vigorous intensity exercise. Within-group differences were tested by T-tests and chi-square tests. Longitudinal mixed effects models (LMMs) characterized differential rates of change in PA over time between patients and non-cancer controls, adjusting for age, race, menopausal status, cognitive reserve, body mass index, anxiety, and depression.

Results: Participants (N=942) included 580 BC patients (53.4±10.6 years) and 362 controls (52.6±10.3 years). At T1, 42% of controls were meeting PA guidelines. This proportion remained consistent across time with 44% meeting guidelines at T2 and 39% at T3. One-third of BC patients met PA guidelines at T1, dropping to 21% at T2 before rising to 37% at T3. At T1, BC patients reported an average of 11.1±15.7 exercise MET hours/week, significantly lower than controls (p=.02). These levels declined significantly in BC patients from T1 to T2 (7.6±11.9; p<.001), remaining lower than controls (p<.001). BC patients also reported significantly lower levels of all activities total minutes and MET hours/week at T2 (all p<.01). LMMs indicated several significant group by time interactions, confirming a steeper rate of decline in BC patients than controls from T1 to T2 for all PA outcomes (all p<.001). From T2 to T3, BC patients reported significantly increased PA across all outcomes compared to controls (all p<.03), with no significant difference in exercise levels between groups at T3 (all p>.64). Regardless of cancer status, significant predictors of exercise across time were age, body mass index, and depression.

Conclusion: These findings suggest that chemotherapy negatively impacts PA, reinforcing the importance of promoting PA during treatment. While BC patients returned to pre-chemotherapy PA levels six months post-chemotherapy, 63% to 79% of patients still failed to meet PA guidelines, highlighting a critical need for PA interventions during survivorship in addition to during treatment.

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AFFECTIVE CONCERNS AND DESIRE FOR SUPPORT AT CANCER-RELATED HEALTHCARE VISITS

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Background: Cancer is often more than a medical diagnosis. For many, confronting cancer entails a shift in their identity and quality of life, as well as a lifelong sense of uncertainty as patients grapple with fears of recurrence, psychological distress, and physical limitations. Given these facets of the cancer experience, fields such as psycho-oncology have emerged with the goal of capturing the full scope of the cancer experience, highlighting the importance of integrative care that addresses both biomedical and psychosocial well-being.

Purpose: Our study sought to explore the affective experiences of cancer patients and the degree to which patients want their healthcare providers to provide psychosocial care during clinical interactions through *SupportScreen*, a state-of-the-art touch-screen interface that prompts patients to identify social, medical, and emotional issues and their desire to address these issues with their healthcare provider.

Method: In collaboration with the City of Hope in Duarte, CA, *SupportScreen* data from over 18,000 patients was analyzed to identify the extent to which patients reported psychosocial difficulties associated with cancer, whether these experiences differ across demographic backgrounds, and whether patients differ in their preferences for assistance from providers.

Results: Significant differences emerged in patients' affective concerns across demographic factors, with males, non-Hispanics, English speakers, and older, married, higher-income, and more-educated patients reporting fewer affective concerns and less frequently desiring assistance from providers. Conversely, more affective concerns were reported by females, Hispanics, non-English speakers, and younger, unmarried, lower-income, and less-educated patients, who also more frequently requested verbal and written assistance from providers to better cope with these issues.

Conclusion: Taken together, our results highlight disparities in patients' affective experiences when confronting cancer and provide novel insights that may help to tailor cancer care to increase patient-centeredness, minimize distress, and improve patient outcomes.

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THE ROLE OF GENDER IN NEW ORAL ONCOLYTIC AGENT PRESCRIPTION EDUCATION

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Background: While oral oncolytic agents (OOA) are both convenient and provide independence over traditional intravenous chemotherapy, patients are burdened with an increased responsibility for medication and symptom management, as well as the high costs of OOA drugs. Patient responsibility for oral chemotherapy requires extensive education from providers at the initiation of treatment, and research has demonstrated that females may actually receive less education about symptom management from providers than their male counterparts. The purpose of this work is to identify the type and source of OOA education (different providers, online, package insert), and to determine if gender influenced the source of care provider education (nurse, oncologist, pharmacist).

Methods: At initiation of a newly-prescribed OOA, 272 patients (136 males, 136 females) completed computer-assisted telephone interviews asking self-report questions pertaining to taking OOAs, managing side effects, paying for OOAs, as well as source of information such as providers, online information, or medication inserts. Gender influence and provider source was tested using chi-square; if any provider source was found to be significant binary logistic model would be used controlling for demographic variables (age, race, education, marital status, and income).

Results: Patients were on average 61-years-old (Range 23-90), with breast and GI being the most common cancers among them. Many patients received education from multiple sources. Only 66% of patients received some financial education, while nearly all patients received education on medication and symptom management from some source. Oncologists were the most common source at 88%, 72% of patients received education from a nurse, 63% from pharmacist, 82% received information from package insert, and only 25% used online sources. Chi square determined that oncology nurses were less likely to provide education to females compared to males, while no difference was found by gender for oncologists or pharmacists. The nurse binary logistic regression still showed females were less likely to receive education than males when controlling for demographics (OR .52, *p*.02).

Conclusions: While there was no difference between genders for oncologists, women were less likely to receive education from nurses. Bias training is needed for all providers to ensure quality care and education, especially for patients being burdened by the responsibilities of managing cancer and OOA therapy. Although nearly all patients received medication and symptom management education, only 66% of patients receiving financial education, which is concerning given the rising costs of OOA therapies. Additional resources should be utilized by providers to discuss patients' financial concerns at the initial prescription, so that they may be able to obtain their OOA throughout treatment.

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PERCEIVED CULTURAL COMPETENCY OF HEALTHCARE PROVIDERS PREDICTS RECEPTIVITY TO COLORECTAL CANCER SCREENING AMONG AFRICAN-AMERICANS

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Background: Colorectal Cancer (CRC) is the second leading cause of cancer-related death in the United States. CRC is particularly burdensome to African-Americans, with lower rates of CRC screening playing a critical role. Patient perceptions of cultural competency in the delivery of healthcare may contribute to CRC screening uptake among African Americans. However, empirical data on cultural competency and CRC screening are lacking. The current research addresses this gap by examining whether African Americans' perceived cultural competency of their healthcare is associated with receptivity to CRC screening.

Objective: To examine whether African Americans' perceived cultural competency of their healthcare predicts receptivity to CRC screening and uptake of at-home CRC screening.

Methods: CRC screening deficient African Americans ($n=429$) completed a validated, patient-focused and generally-framed measure of perceived cultural competency in the delivery of their healthcare ($\alpha = .91$). Participants then watched a brief online tutorial about CRC risks, prevention, and screening. Receptivity to CRC screening was measured using Theory of Planned Behavior (TPB) constructs (attitude, norms, perceived control, and intentions). Participants were also given an opportunity to receive a no-cost at-home Fecal Immunochemical Test (FIT) screening kit through mail, and we measured willingness to receive (WTR) this FIT Kit as a behavioral outcome (yes-no). We assessed direct links from perceived cultural competency to TPB constructs, as well as indirect links to WTR.

Results: Perceived cultural competency predicted more favorable CRC screening attitudes, norms, and perceived control ($p's < .001$), as well as stronger CRC screening intentions ($p=.01$). Indirect effects of perceived cultural competency on greater WTR were fully mediated by links to CRC screening attitudes and intentions ($p's < .001$), whereas indirect effects on less WTR were mediated by perceived control ($p < .01$). Links from cultural competency to WTR were not mediated by norms ($p=.075$).

Conclusion: Perceived cultural competency of healthcare may play a crucial, yet still overlooked role in CRC screening uptake among screening deficient African Americans.

Methods: to augment feelings of culturally competent healthcare among racial minorities may be useful in addressing CRC screening disparities, although links to perceived control could paradoxically reduce WTR at-home CRC screening.

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A FEASIBILITY STUDY OF 12-WEEKS OF SMARTPHONE-BASED HEALTH EDUCATION PODCASTS IN MYELOPROLIFERATIVE NEOPLASM PATIENTS

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Background: Patients with MPN (Myeloproliferative Neoplasms), rare blood cancers, have a relatively long-life expectancy, but experience chronic symptoms due to a lack of curative therapies. Our work suggests smartphone-based meditation is feasible and has preliminary effects on MPN patient symptom burden. However, an appropriate smartphone application-based control condition is needed to test efficacy of meditation in future studies. The purpose of this study was to determine the feasibility of a 12-week app-based health education podcast control group in MPN patients. We report pre- and mid-intervention findings here (6-weeks).

Methods: MPN patients were recruited using social media. Participants were asked to listen to ≥ 60 minutes of health education podcasts per week. Podcasts contained general cancer-related health education material. Participants tracked their time listening to the podcast in a weekly log. Assessments were conducted for sleep, pain-intensity, anxiety, depression, sexual function, global health and the MPN Symptom Assessment Form Total Symptom Score (MPN-SAF TSS) at pre-, mid (6-weeks) and post- (12-weeks) intervention.

Results: Ninety-six participants were enrolled in the study. To date, 31 participants have completed mid-intervention (6 weeks) and of those, one dropped out due to difficulties with the technology of the app. On average participants listened to 63 minutes of podcasts per week and were satisfied with the content. Only a small increase in physical health (baseline $M = 32.59$, 6-week $M = 34.76$, $p=.007$, $d = 0.27$) and a small decrease in MPN symptom burden was detected after 6-weeks (baseline $M = 26.79$, 6-week $M = 22.48$, $p=.008$, $d = 0.22$). Significant changes in pain, anxiety, depression, sleep disturbance, or mental health were not found.

Discussion: The current study presents preliminary feasibility of a mobile app podcast control condition. Participants were satisfied with the content, and they engaged in listening to a degree that is comparable to the expected meditation app participation per week, suggesting this will be an appropriate, time-matched control condition.

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PALLIATIVE CARE KNOWLEDGE AND WORRY ABOUT CANCER RECURRENCE IN CANCER SURVIVORS

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Background: Fear of cancer recurrence is a significant burden for many cancer survivors, warranting examination of possible contributing factors. Palliative care education is vital to informed decision making for cancer patients, but unintentional adverse effects that may extend into survivorship are understudied.

Purpose: To assess whether knowledge of palliative care was associated with worry about cancer recurrence in cancer survivors.

Methods: Data were obtained from the 2018 HINTS surveys of US adults by the National Cancer Institute. Participants were included if they responded “yes” to the question: “Have you ever been diagnosed as having cancer?” Knowledge about palliative care was measured using the question, “How would you describe your level of knowledge about palliative care?” Cancer information seeking was dichotomized using the question, “Have you ever looked for information about cancer from any source?” Health insurance status was dichotomized. General health was measured using the question, “In general, would you say your health is...” with response options, “Excellent,” “Very good,” “Good,” “Fair,” or “Poor.” The outcome, worry about cancer recurrence, was measured using the question, “How worried are you about getting cancer again?” with response options, “Not at all,” “Slightly,” “Somewhat,” “Moderately,” or “Extremely.” SAS 9.4 programming was used to account for sample weighting; results are representative of the US non-institutionalized adult population.

Results: 567 cancer survivors in the sample provided complete data for all variables. 65.61% had never heard of palliative care and 77.19% reported seeking cancer information. In a model that controlled for general health, health insurance, and cancer information seeking, which may otherwise explain cancer worry, knowledge about palliative care significantly predicted worry about cancer recurrence, with a significant change in $R^2 = .08$, $F(1,562) = 49.07$, $p < .001$.

Conclusion: Although a majority of cancer patients had never heard of palliative care, those who had experienced more worry about getting cancer again were more likely to be aware of it. Because how participants became aware of palliative care is unknown, it is unclear if conversations with health care practitioners are comforting or concerning.

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PALLIATIVE CARE KNOWLEDGE AND INFORMATION SEEKING IN CANCER SURVIVORS AND CAREGIVERS

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Background: Palliative care aims to improve the physical, emotional, and spiritual quality of life of patients and their families when cancer cannot be cured. Awareness of palliative care is understudied in cancer survivors and caregivers, as well as in the general population. Multiple barriers exist to the integration of palliative care other than lack of awareness, including oncologists' discomfort with and lack of training regarding how to address palliative care.

Purpose: To assess knowledge of palliative care in cancer survivors and cancer caregivers, as well as primary and trusted sources of information regarding palliative care.

Methods: Data were from the nationally-representative 2018 HINTS surveys of US adults by the National Cancer Institute. We assessed knowledge about palliative care, where respondents reported where they would go first to seek palliative care information, and who respondents trust the most as a source of information about palliative care. Missing data were excluded. SAS 9.4 programming was used for all analyses to account for sample weighting such that results are representative of the US non-institutionalized adult population.

Results: There were 3504 participants from the general population, 593 cancer survivors, and 593 cancer caregivers in the sample. Concerning knowledge of palliative care, 71.26% of the general population had no knowledge of it, compared to 65.61% of the cancer survivors and 51.35% of the cancer caregivers. Although both cancer survivors and caregivers reported health care providers as the first source they would go to for palliative care information (65.53% and 50.61%, respectively), caregivers were more likely to report turning to the internet (48.1%) than survivors (23.67%). However, survivors and caregivers both overwhelmingly reported health care providers as their most trusted source of information about palliative care (85.99% and 93.68%, respectively).

Conclusion: The majority of the US population is unfamiliar with palliative care, including those who have had cancer. Providers are still the first line of education about palliative care for cancer survivors and caregivers, as well as the most trusted as a source of palliative care information. Future research should explore pathways for informed communication about palliative care between care teams and patients.

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CANCER FATALISM AND HEALTH INFORMATION SEEKING: EXPLORING DIFFERENCES ACROSS GENERATIONS AND RURAL GEOGRAPHIES

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Background: Cancer fatalism, or pessimism and confusion about its prevention, is associated with high-risk health behaviors. Information seeking combats cancer fatalism; however, people at risk for cancer, including older and rural adults, experience health information seeking challenges such as inaccessibility, comprehension frustration, and quality uncertainty. Research asserts that we can encourage people to seek health information by promoting their confidence. However, limited research has tested the theoretical assumption that enhancing perceived confidence to overcome barriers in health information seeking will alleviate cancer fatalism.

Objective: To understand how perceived challenges and confidence in health information seeking attenuate or buffer fatalistic cancer beliefs across age and rurality.

Methods: In 2017, 895 adults from a large southeastern medical university's cancer catchment area participated in a random digit dial survey. Cancer fatalism and health information seeking challenges and confidence (4-pt Likert-type scales) were adopted from the Health Information National Trends Survey. ANOVAs and independent samples t-tests examined age and rural differences in cancer fatalism. A hierarchical linear regression was conducted to examine the interaction of perceived confidence and challenges in health information seeking on cancer fatalism, controlling for age and rurality.

Results: Participants were Millennials (18-35; 19%), Generation X (36-51; 23%), Baby Boomers (52-70; 40%), and members of the Silent Generation (71-115; 16.9%) who were from metro (78.9%) and non-metro (21.1%) counties (2013 RUCC definitions). Participants reported cancer fatalism ($M = 2.38$; $SD = .68$), with low perceived challenges ($M = 2.06$; $SD = .76$) and high confidence in health information seeking ($M = 3.73$; $SD = .99$). Cancer fatalism was high among the Silent Generation and non-metro adults, and it was associated with perceived challenges ($b = .20$; $SE = .03$; $p < .001$) and low confidence ($b = -.06$; $SE = .03$; $p < .05$) in health information seeking. High confidence in health information seeking attenuated cancer fatalism, but only when perceived challenges were already low ($b = .11$; $SE = .03$; $p < .001$).

Discussion: Alleviating intrinsic barriers to health information seeking is fundamental to address fatalistic cancer beliefs among older and rural adults. Enhancing confidence will be important for sustained information seeking once barriers are reduced.

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RELATIONAL PROCESSES AND ADJUSTMENT AMONG YOUNG ADULTS WITH CANCER: THE ROLE OF TECHNOLOGY-RELATED COMMUNICATION

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Objective: Little attention has been paid to understanding how engaging in cancer-related interpersonal exchanges via varying modes of communication influences psychological well-being among young adults with cancer. This study explored the moderating role of mode of communication on the relationship of relational processes of disclosure and responsiveness with psychological well-being.

Methods: 61 young adults with cancer ($Age = 34.59$, $SD = 4.82$) completed a questionnaire about their most recent cancer-related conversation. Participants reported on mode of communication (i.e., face-to-face, text message, phone call) and relational processes of self- and support member- disclosure of thoughts, feelings, and information and how accepted, cared for, and understood they felt within the cancer-related conversation. Cancer adjustment included measures of functional well-being and depressive symptoms.

Results: There were no main effects of communication mode or relational processes on either indicator of adjustment to cancer. However, mode of communication did moderate the relationship between relational processes and adjustment to cancer. Greater relational processes of disclosure and responsiveness were associated with better functional well-being and lower depressive symptoms only among those who engaged in their most recent cancer-related conversation through technology-related communication and not for those engaged in face-to-face communication.

Conclusion: Relational processes that are likely to benefit psychological adjustment after cancer appear to be particularly advantageous in cancer-related interpersonal exchanges via technology-based communication among young adult survivors. Young adults commonly report feelings of social isolation and psychological distress after cancer. These findings suggest that technology-related communication holds promise as a way to strengthen support-related communication and protect against distress.

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LATINO PATIENTS PERSPECTIVE: INTEGRATION OF FAMILY MEMBERS IN MEANING CENTERED PSYCHOTHERAPY

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Objective: Family caregivers are a fundamental source of care for Latino cancer patients. Yet the family related psychosocial needs and perspectives of family caregiver's integration in psychological care of Latino patients with advanced cancer are not well understood. Changes in cancer care and delivery, along with the growing population of Latinos with advanced cancer and their caregivers, warrant increased attention to the roles and demands of caregiving and family needs. This presentation describes: 1) the perspective of Latino patients with advanced cancer on the role of the family in care, and 2) the correlation between family functioning and psychological symptoms (depression and anxiety).

Method: Quantitative (n=79) and qualitative data (semi-structured interviews, n=24) was collected from Latino patients with advanced cancer between 2015 and 2019 from a major cancer center (n=48), and two cancer clinics, one located in New York city (n=22) and the other in Ponce, Puerto Rico (n=12). Family functioning was measured with the Family Relationship Index and depression / anxiety with the Hospital Anxiety and Depression Scale. The semi-structured interviews were transcribed, and the data was analyzed using open coding thematic analysis. Correlation between family cohesion, and psychological factors was performed.

Results: Data shows that 81% of Latino advanced cancer patients reported low family functioning; and those with low family functioning had higher depression (r(75)=-.27, p=.02), anxiety (r(75)=-.27, p=.02), and hopelessness (r(75)=-.23, p=.05) levels. Higher family functioning was also strongly associated to lower anxiety (r(75)=-.39, p<.001). The themes and codes from the qualitative data revealed presumably on family relationships with emphasizes on the following themes: counseling; support; change after diagnosis; communication; conflict; sources of meaning; sources of love; sources of beauty; sources of humor; lesson of life; legacy for kids; family union; and coping mechanism.

Conclusion: Correlations between family cohesiveness and psychological symptoms (depression and anxiety) suggest that these components are crucial in the adjustment and well-being of Latinos with advanced cancer. Further, it revealed presumably the impact of family relationships in cancer coping, and likelihood of integrating family members into therapy.

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OBESITY, DISTRESS AND DESIRE FOR SUPPORTIVE CARE AMONG PATIENTS DIAGNOSED WITH CANCER

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Background: Obese weight status has been associated with an increased risk of several cancers, greater symptom burden and poorer prognosis. Cancer patients and survivors with obesity represent a vulnerable population who may need targeted supportive care services and health promotion efforts. The current study explored the association between obesity, psychosocial outcomes and supportive care requests among patients with breast, prostate, or colon cancer.

Methods: This retrospective study included 4,159 patients over the age of 55 who were diagnosed with postmenopausal breast (52.2%), prostate (38.7%) or colon cancer (9.1%). Prior to treatment, patients were screened for problem-related distress using a 33-item touch screen-based instrument and reported whether they desired supportive care services. Obese weight status was defined as a BMI ≥ 30 kg/m².

Results: Across diagnoses, most patients were married, non-Hispanic and had at least some college education, with a mean age of 66.7 years. Obese breast and prostate cancer patients reported higher rates of clinically relevant distress compared with non-obese patients (p< 0.05), whereas an opposite trend was noted for patients with colon cancer. Nearly 20% of patients requested supportive services, with similar rates found among obese and non-obese patients across all cancer types; however significant differences emerged in the problems that drove supportive care requests. Obese patients were more likely to request support regarding symptoms of depression (p< 0.05) and pain (p< 0.05) compared to non-obese patients.

Conclusion: The current study provides important insight into obesity-related differences among patients diagnosed with cancer. Obese weight status was associated with higher rates of distress and important differences in desire for supportive care, notably among two frequently reported symptoms in the context of cancer, pain and anxiety. These findings can help guide the development and implementation of supportive care services for this 'at-risk' population.

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6:15 PM-7:30 PM

PALLIATIVE CARE AMONG ADULT CANCER SURVIVORS: KNOWLEDGE, ATTITUDES, AND CORRELATES

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Background: Palliative care (PC) can improve quality of life and comfort for patients with serious illnesses such as cancer. The purpose of the present study is to examine cancer survivors' understanding and perception of PC.

Methods: Data were obtained from the Health Information National Trends Survey (HINTS 5, Cycle 2), a nationally representative survey of health-related information. Participants described their knowledge, attitudes, and understanding of the goals of PC. Descriptive statistics were examined; correlates of PC knowledge were identified in a weighted multivariable logistic regression model.

Results: The sample consisted of 593 individuals who reported a personal history of cancer of which, 344 were females (58%) and 246 were males (42%), aged 23 to 97 years ($M/SD = 65.88[18.21]$), with a mean time from diagnosis of 13.83 years ($SD: 18.21$). Sixty-four percent of participants indicated that they have never heard of PC. Of those who had, most strongly agreed that the goals of PC were to manage pain and other physical symptoms (74.5%), offer social and emotional support (64.5%), and help friends and family cope with a patient's illness (52.5%). Only 29.6% strongly agreed that a goal of PC was to give patients more time at the end of life. The majority of participants strongly disagreed with the following statements: "if you accept palliative care, you must stop other treatments," (46.7%); "palliative care is the same as hospice care," (29.1%); and "when I think of 'palliative care', I automatically think of death," (31.6%). In a multivariable model, being female (adjusted odds ratios [AOR] 2.01, 95% CI 1.13-3.57) and seeking cancer information from any source (AOR 1.31, 95% CI 1.04-1.66) were positively associated with knowledge of PC, while being younger than 40 years of age at time of survey (AOR 0.18, 95% CI 0.07-0.45) was negatively associated.

Discussion: These findings indicate low knowledge of PC among cancer survivors who may substantially benefit from this support. Further, while understanding of the purpose of PC is high among those with knowledge, many cancer survivors equate PC with hospice or death. Men, those who do not seek cancer health information, and younger patients were less aware of PC relative to comparison groups. Future research is needed to increase overall knowledge of PC among cancer survivors and to examine potential discrepancies between cancer patients' understanding of and attitudes towards PC services.

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POSTTRAUMATIC STRESS-LIKE SYMPTOMS AMONG CANCER CAREGIVERS ACROSS THE ILLNESS TRAJECTORY AND NEUROENDOCRINE HEALTH OUTCOMES

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Cancer can be perceived as traumatic to family caregivers, precipitating post-traumatic stress-like symptoms (PTSS). PTSS may be associated with neuroendocrine stress biomarkers, and thus serve as precursor to caregiver-related health decline. The current study examined a measurement model of caregiver PTSS and investigated longitudinally to what extent caregiver PTSS vary and are associated with neuroendocrine biomarkers in the two years post-diagnosis.

Family caregivers (N=155, age $M=49$, 72% female, 33% patient's spouse, 64% Hispanic, 20% income < \$40,000) of newly and recently diagnosed colorectal cancer patients participated in the study. Caregivers completed a psychosocial questionnaire and collected 4 saliva samples on 2 consecutive days at around 3 months post-diagnosis (T1), 11 months post-diagnosis (T2), and 20 months post-diagnosis (T3). Salivary cortisol was assayed and mean waking levels and diurnal slopes were computed. Caregiver age, body mass index, and sleep quality were covariates.

Confirmatory factor analysis (CFA) tested a model with 4 PTSS symptom clusters: three clusters measured by the Impact of Events Scale (hyperarousal, intrusive thoughts, avoidance) and one symptom cluster representing negative alterations in cognitions and mood with select questionnaire items. The 4 factor measurement model revealed adequate fit at T1 ($\chi^2(2)=1.52$ $p=0.45$, RMSEA=0.00, CFI=1.00, SRMR=0.01), T2 ($\chi^2(2)=3.43$ $p=0.18$, RMSEA=0.08, CFI=0.99, SRMR=0.02) and T3 ($\chi^2(2)=2.35$ $p=0.31$, RMSEA=0.04, CFI=0.99, SRMR=0.05). Standardized factor loadings ranged from 0.60 to 0.96 ($ps < .001$). Cross-lagged panel analysis revealed caregiver PTSS were stable across timepoints. Higher PTSS at T2 was concurrently significantly associated with lower waking cortisol levels ($\beta=-3.43$, $p=.02$), and marginally associated with flatter cortisol slope ($\beta=-0.52$, $p=.08$). PTSS at T1 marginally predicted lower waking cortisol levels at T2 ($\beta=-.69$, $p=.06$) and T3 ($\beta=-.21$, $p=.08$).

The 4-factor model of PTSS was psychometrically sound at each timepoint. Caregiver PTSS was stable across the cancer trajectory, which may be due in part to the enduring, persistent nature of cancer-related traumatic exposures. As caregiver PTSS in the first year manifested in dysregulated cortisol levels concurrently and at follow-up, this period may represent a critical time for psychosocial intervention to reduce potential psychophysiological impact of caregiving.

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MODERATING EFFECTS OF PHYSICAL ACTIVITY ON THE ASSOCIATIONS OF QUALITY OF LIFE, DISTRESS, AND DYSPNEA IN ADVANCED LUNG CANCER

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Background: Approximately 50% of patients with advanced lung cancer experience dyspnea symptoms which are associated with significant symptom burden, psychological distress, and poor quality of life (QOL). Existing research suggests that physical activity can improve QOL, distress and fatigue in some cancer populations. In this study, we explored the degree to which physical activity moderates the associations of these key patient-reported outcomes with dyspnea.

Methods: From 5/17/2017 to 10/30/2019, we enrolled 155 patients with incurable lung cancer and at least moderate breathlessness (i.e., Modified Medical Research Council Dyspnea Scale \geq 2) from two centers in Boston, MA in a trial of a behavioral intervention for dyspnea. Prior to randomization, patients completed baseline self-report measures of dyspnea (Cancer Dyspnoea Scale; CDS), QOL (Functional Assessment of Cancer Therapy-Lung; FACT-L), distress (Hospital Anxiety & Depression Scale; HADS), and physical activity status (Godin-Shephard Leisure Time Physical Activity Questionnaire; GSLTPAQ). We conducted moderation analyses of these baseline measures using linear regression with the PROCESS macro in SPSS.

Results: In the sample, worse baseline dyspnea was associated with lower QOL on the FACT-L ($r=-.44$, $p<.001$) and higher levels of distress per the HADS ($r=.42$, $p<.001$). Patient-reported physical activity on the GSLTPAQ significantly moderated the effects of the FACT-L ($B=-0.005$, $p=.046$) and HADS ($B=.013$, $p=.03$) scores on dyspnea symptoms (per the CDS). Specifically, the association of the FACT-L with the CDS became stronger at increasingly higher levels of patient-reported physical activity (Effect at 1 SD below Mean $=-0.15$ versus 1SD above the Mean $=-0.28$). This pattern was similar for the effect of the HADS on CDS scores at different levels of physical activity (Effect at 1 SD below Mean $=0.36$ versus 1SD above the Mean $=0.73$).

Conclusion: While dyspnea is significantly associated with worse QOL and higher distress, these relationships appear to be moderated by level of physical activity, such that the associations are stronger among those who report higher levels of activity. It is possible that engaging in physical activity exacerbates cancer-related dyspnea that may influence QOL and mood. Further research should investigate the relationship between physical activity and dyspnea, and continue to explore methods aimed at improving the patient-reported outcomes of dyspneic patients.

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PRELIMINARY ANALYSIS OF PATIENT-CENTERED GOALS IN A CANCER SURVIVORSHIP TELEPHONE-BASED HEALTH COACHING INTERVENTION

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Background: Cancer survivorship self-management involves patient behavioral change to mitigate risks of cancer and its treatments. Health coaching may provide a novel way of increasing self-efficacy of survivors to engage post-treatment self-management to enhance psychosocial adjustment and engagement in regular follow-up visits. This study examines survivors' health coaching (HC) goals and the discussions related to their HC goal progress.

Methods: Survivors of localized (Stage I-III) breast, prostate and colorectal cancers ($n=29$) were recruited from primary care clinics in New Jersey and the New Jersey Cancer Registry to participate in a National Cancer Institute-funded intervention testing mHealth and HC interventions to increase self-management (R01 CA176838). A content analysis of the audio-recorded HC sessions was conducted to explore survivor generated self-management goals and breadth of discussions.

Results: Survivors of breast ($n=15$), colorectal cancer ($n=6$), and prostate cancer ($n=3$) completed the HC intervention. Survivors nominated lifestyle (58%), general health and surveillance (21%), late and long-term effect symptom management (14%) and coping (7%) goals. The most common lifestyle goal among survivors was weight loss/maintenance and increasing physical activity. Goal discussions surrounding late and long-term effects ranged from how to manage fatigue to addressing difficulty with mental tasks. Survivors that generated coping goals focused on managing stress and/or cancer recurrence fears and resuming dating while coping with sexual changes.

Conclusions: Cancer survivors' self-management goals are closely aligned to the care recommendations developed to promote optimal health for longer-term survivorship. Telephone-based HC has translational potential for supporting longer-term cancer survivors' behavioral change and self-management across different care settings.

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INTERRELATIONSHIPS BETWEEN HEALTH-RELATED QUALITY OF LIFE AND EXECUTIVE FUNCTIONING AMONG ADULTS WITH BRAIN TUMORS OVER TIME

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Brain tumors and the associated treatment sequela are known to negatively impact patients' health-related quality of life (HRQoL) and executive functioning (EF). However, little is known about the associations between HRQoL and EF among adults with brain tumors before and after radiation therapy (RT). As part of a larger study, patients completed a self-report measure of HRQoL and a neurocognitive assessment, including four measures of EF, at four timepoints: pre-RT, three-months post RT, six-months post RT, and 12-months post RT. The four EF measures were combined to recreate an EF composite score, and cross-lagged panel model path analysis was used to examine the interrelationships between HRQoL and EF over time. At baseline, the sample ($N = 53$) included 31 men (58.5%) and 22 women (41.5%) who were primarily non-Hispanic White (81.1%), married (73.6%), and ranged from 20 to 75 years old ($M = 47.04$ years, $SD = 13.9$ years) with an average of 15 years of formal education ($SD = 2.6$ years). Most patients had either a high- or low-grade glioma (43.4% and 17.0%, respectively) and a subtotal resection (54.7%). A cross-lagged panel model with second-order auto-regressive paths, synchronous correlations, and cross-lagged predictor pathways fit the data well descriptively ($CFI = .95$, $RMSEA = .18$, $SRMR = .06$). HRQoL was more stable over time—the means were relatively unchanged across the four time points—compared to EF. HRQoL and EF were moderately, positively correlated ($r_s = .33$ to $.44$, $p_s < .05$) at all of the time points except for three-months post RT ($r = -.08$, $p = .60$). Only one cross-lagged pathway between HRQoL and EF was significant. Specifically, EF at six-months post RT was predictive of HRQoL at 12-months post RT ($\beta = .24$, $p = .049$). This finding suggests that patients' EF six months after RT may impact their HRQoL one-year post-RT completion. Although the mechanisms underlying this relationship remain unclear, it is possible that interventions to improve or preserve EF prior to six-months post RT may facilitate later improvements in HRQoL.

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ABMEDIOUP

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FEASIBILITY TRIAL OF TARGETED PAIN COPING SKILLS TRAINING FOR PERSISTENT PAIN AFTER BREAST CANCER SURGERY

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Although surgery is an important part of curative treatment for breast cancer, persistent breast pain (PBP) following surgical removal of the tumor (lumpectomy or mastectomy) is not unusual, with prevalences ranging from 25-60%. The goal of the current study was to conduct a pilot randomized controlled trial to evaluate the feasibility and benefits of a targeted pain coping skills training (PCST) intervention developed for women with PBP following breast cancer surgery.

The primary aims of the study were to: 1) examine the feasibility, acceptability, and engagement in the targeted PCST protocol, and 2) examine the impact of the targeted PCST protocol on PBP in comparison to the usual care condition.

Breast cancer survivors with PBP ($n=26$) were recruited from a tertiary care medical center and a community clinic located in a medically underserved area. They met the following criteria: Stage 0 to III breast cancer; first breast surgery within the previous 9 months; average breast pain ≥ 3 out of 10 prior to enrollment. Participants were given printed health education materials and randomly assigned to receive either: 1) Targeted-PCST, or 2) usual care. Participants in the Targeted-PCST intervention completed 8 weekly sessions via telephone and were given an accompanying intervention workbook.

The study participation rate was 43% and the study retention rate was 81%. Engagement in Targeted-PCST sessions was high, with 92% of women completing all intervention sessions. Women reported that they were satisfied with the intervention ($M=5.0$; 1 to 5 scale). The Targeted-PCST group had significant decreases in pain severity and interference (PEG score) ($p=.04$, $d=-.82$) and in depressive symptoms ($p=.001$, $d=-.52$) compared to the usual care group. While the effect sizes for decreases in anxious symptoms and cancer-specific distress were moderate ($d=-.42$ and $d=-.45$, respectively), differences between groups were not statistically significant ($p_s \geq .17$). The Targeted-PCST group experienced significant decreases in pain catastrophizing ($p=.01$, $d=-.70$) and showed a trend for increases in self-efficacy ($p=.08$, $d=1.21$) compared to the usual care group.

This pilot study provides evidence of the feasibility and benefits of Targeted-PCST for breast cancer survivors. These findings provide strong support for future research to examine generalizability to other clinical settings and to explore the roles of catastrophizing and self-efficacy as mediators of beneficial effects.

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FINANCIAL TOXICITY RELATES TO GREATER DISTRESS AND WORSE QUALITY OF LIFE AMONG BREAST AND GYNECOLOGIC CANCER SURVIVORS

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Background: Cancer patients are increasingly faced with high costs and financial problems resulting from treatment and cost-sharing policies (e.g., higher deductibles, out-of-pocket expenses). “Financial toxicity” (FT) refers to distress and burden of treatment costs. Predictors and correlates of FT are not well understood.

Objectives: Preliminary analyses of a larger survey study evaluated: 1) patient factors related to FT and 2) associations between FT, distress, and quality of life (QOL).

Methods: Breast and gynecologic cancer patients completed a survey about cancer needs and concerns including FT (Comprehensive Score for financial Toxicity [COST]), distress (Patient Health Questionnaire [PHQ-4]), and QOL (Functional Assessment of Cancer Therapy [FACT-G]). Analyses included chi-square, t-tests, and ANOVAs. Separate regression models tested associations between FT and distress and QOL, controlling for covariates.

Results: Participants (N=220; 77% breast cancer) averaged 55.0 years old (SD=12.1), 3.5 years (SD=4.3) post-diagnosis, were racially/ethnically diverse (65% White, 26% Asian, 10% “Other,” i.e., Black, Native American, and Hawaiian/Pacific Islander; 13% Hispanic), and mostly partnered (72%) with private insurance (66%). A large proportion of women reported some FT (M=18.1, SD=11.2; range 0-44); 45% worried about financial problems as a result of cancer and 20% reported financial hardship due to cancer (“quite a bit/very much”). Greater FT was reported by women who identified as a non-Asian minority (“Other” vs. Whites and Asians, $p=.001$), Hispanic (vs. non-Hispanic, $p=.004$), and single (vs. partnered, $p=.03$), and those with lower education ($p<.001$) and income ($p<.001$). No differences in age, cancer type, treatment status, or insurance type were observed (p 's $>.10$). In separate models, greater FT related to greater distress ($B=.49$, $p<.001$) and worse QOL ($B=-.60$, $p<.001$), controlling for age, racial/ethnic identity, partnership status, education, income, time since diagnosis, and treatment status. In each model, FT accounted for 17.4% and 29.5% of the variance in distress and QOL, respectively, after accounting for covariates.

Conclusions: Cancer-related financial burden may impact patient subgroups disproportionately, particularly minorities and single women, with pervasive negative effects. Future research should explore ways to better prepare and support patients such as providing better education about treatment costs and financial counseling.

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INTERSECTIONALITY AND THE QUALITY OF PATIENT-PROVIDER COMMUNICATION IN CANCER CARE

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Communication between patient and providers is aimed to create a good interpersonal relationship, to facilitate the exchange of information, and to include patients in decision making. When individuals engage in discussions with their doctors, they will bring with them their social identity, which might include attitudes and values, age, education, race, ethnicity, gender. Each social identity can represent a lower or higher influence of power. Intersectionality is the idea that multiple dimensions of social identity may increase the probabilities to produce inequalities as a result of underlying power structures (e.g., Foreign-born Latinas may experience higher inequality than U.S. born NHW females). The purpose of this study is to determine the association between the quality of patient-provider communication and the interaction of social identities (ethnicity, gender, and nativity) among adults with cancer. Data from the Health Information National Trends Survey (HINTS) will be analyzed for six iterations collected from 2011 to 2018. HINTS data's primary purpose is to collect information about cancer-related health communication access, usage, and practices. The HINTS target population is adults aged 18 or older in the civilian non-institutionalized population of the United States. For this analysis, we restrict our sample to those diagnosed with cancer $n=3125$. Perceived Patient-Provider Communication Quality (PPPCQ) is a seven-item scale to measure the patient's perception of the quality of communication with their health care providers with higher scores representing higher perceived quality of the communication. The HINTS protocol defines “provider” as any doctor, nurse, or other health care professional seen within the past 12 months. Three social identities will assess intersectionality: 1) race/ethnicity (Hispanics, Non-Hispanic White, and Non-Hispanic Black), 2) gender, and 3) nativity (the U.S. and foreign-born). Multivariate models will regress PPCQ and social identity variables. Intersectionality will be analyzed as interactions of the social identity variables.

Results: Descriptive analysis of the social identity of the sample include: 1) 33% racial and ethnic minority (7.5% Hispanics, 8.9% Non-Hispanic Black, and 67% Non-Hispanic White), 2) 58% female, and 3) 8% foreign-born. 42.6% of the sample report at least one social identity with a lower structure of power (racial-ethnic minority, female or foreign-born), 13.6% of the sample report 2, and 3% report three social identities with lower structure of power. The PPCQ had a mean of 84.7 (SD = 16.9).

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PATIENT EXPECTATIONS AS MODERATORS OF BREAST CANCER SURVIVORS' RESPONSE TO GROUP PSYCHOSOCIAL INTERVENTIONS

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Patient expectations are viewed as a powerful determinant of treatment response across psychosocial interventions, such that positive expectations about how effective treatment will be are generally related to greater therapeutic gains. Despite this evidence, expectations are often not considered when evaluating the efficacy of psychosocial intervention trials. The purpose of this study was to examine the impact of patient expectations on outcomes of an American Cancer Society-funded pilot randomized controlled trial comparing Meaning-Centered Group Psychotherapy for Breast Cancer Survivors (MCGP-BCS) to a standardized support group (SG), both delivered virtually.

BCS ($n=59$) with elevated distress were randomly assigned to eight 90-minute sessions of either MCGP-BCS or SG. BCS' treatment expectations were measured at baseline using the Credibility and Expectancy Questionnaire (CEQ). To examine the influence of expectations on meaning-related outcomes (i.e., Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale [FACIT-Sp] and Posttraumatic Growth Inventory [PTGI]) assessed at baseline, post-intervention, and three months post-intervention, generalized estimating equation analyses were conducted to examine treatment effects controlling for expectations.

Significant Time \times Condition interaction effects were observed for spiritual well-being when controlling for expectations. Specifically, compared with their baseline scores (Total FACIT-Sp $M=24.43$, $SE=1.49$ for MCGP-BCS; $M=26.40$; $SE=1.91$ for SG), participants in MCGP experienced a greater increase in spiritual well-being post-intervention ($M=31.81$, $SE=1.56$ versus $M=29.56$, $SE=2.09$; $p=.048$), which was sustained at follow-up ($M=31.70$, $SE=1.76$ for MCGP-BCS versus $M=26.89$, $SE=1.86$ for SG; $p=.005$). Further, there was a significant Time \times Condition \times Expectations interaction effect ($p=.045$) on PTGI scores such that individuals in MCGP-BCS with high expectations experienced greater improvement in posttraumatic growth between baseline and follow-up compared to individuals with lower baseline expectations. In the SG, lower expectations at baseline were associated with increases in posttraumatic growth at follow-up whereas higher baseline expectations were not.

These findings indicate patient expectations can have impact on therapeutic outcomes, suggesting expectations should be routinely measured in intervention trials and might be modulated in ways that maximize treatment outcomes.

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DO SOCIAL SUPPORT AND INFLAMMATION PREDICT PROGNOSIS IN PATIENTS WITH ACUTE CORONARY SYNDROMES?

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Background: Low perceived social support is associated with poor cardiac outcomes and higher all-cause mortality (ACM) in patients with acute coronary syndromes (ACS). This relationship may be mediated by immune function. Moreover, sex may moderate the social support-cardiac outcomes association.

Aims: To determine if: 1) social support predicts time to ACM and major adverse cardiac events (MACE), 2) peripheral inflammation, measured by C-reactive protein (CRP), mediates the relationship between social support and MACE/ACM, 3) sex moderates the aforementioned relationships.

Methods: 250 ACS patients (73% male) were drawn from 1,087 participants in the Prescription Use, Lifestyle, and Stress Evaluation (PULSE), a prospective, observational study of patients hospitalized after an ACS, based on complete data on all variables. Selected patients ($M=61.3$ yrs, $SD=10.3$) were younger compared to the overall sample [$M=64.7$, $SD=11.8$; $t(1085)=-4.1$, $p<0.05$], more likely to be African-American (20.6% vs. 18.6%), and less likely to be white [60.9% vs. 64.9%; $X^2(6, N=1078)=12.6$, $p<0.05$]. Patients completed the ENRICH Social Support Instrument (ESSI) at baseline (max score=30). Serum CRP was collected at baseline and one-month follow-up. The first recurrence of a MACE [i.e., hospitalization for nonfatal MI, unstable angina (UA)], or urgent coronary revascularization] and ACM were ascertained through 12 months and adjudicated by two cardiologists. Multiple regression and Cox proportional hazards survival analysis were conducted.

Results: 23.3% of the sample experienced a MACE/ACM. Social support ($M=25.9$; $SD=4.9$) was not significantly associated with MACE/ACM in adjusted analysis ($HR=1.0$; $CI, 0.8-1.3$; $p=0.84$) with covariates including age, education, BMI, medical comorbidities, and depression. Social support did not significantly predict CRP levels at one-month ($R^2=0.2$, $\beta=0.02$, $p=0.56$). Though women (6.0 mg/l) had significantly higher levels of CRP at one-month than men (3.0 mg/l), sex was not a significant moderator of social support and CRP ($R^2=0.2$, $\beta=-0.01$, $p=0.36$).

Conclusions: Contrary to our hypothesis, social support did not predict MACE/ACM in ACS patients. The findings of this study add to the literature underscoring the complexities of social support in health outcomes. Similar to the ENRICH trial, the overall high levels of social support reported in this sample may have made it difficult to detect the effect of social support on cardiac and mortality outcomes.

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C146

6:15 PM-7:30 PM

IMPACT OF SMARTPHONE BREATHING MEDITATION UPON SYSTOLIC BLOOD PRESSURE AMONG PRE-HYPERTENSIVE ADULTS.

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Background: Pre-hypertension (HTN), a primary risk factor for HTN, affects ~33% of adults. Chronic stress is a risk factor for HTN and CVD. A previous 6-month dose-response trial using the breathing meditation smartphone app, Tension Tamer (TT), suggested combination of dosage levels over time might have the greatest influence upon sustained adherence and systolic blood pressure (SBP) reduction among SBP pre-hypertensive adults. The TT app, compatible on both iOS and Android platforms, uses audio/video clip instructions and proprietary embedded, validated reflective photoplethysmography software that captures continuous real-time heart rate from a user's fingertip placed over camera lens during meditation sessions. Users receive immediate feedback graphs after each session showing their changes in heart rate. They also receive motivational/social reinforcement SMS text messages based upon previous day's levels of adherence. We conducted a two-arm 12-month small-scale efficacy RCT among pre-HTN adults with primary outcome of resting SBP changes.

Methods: Eighty adults (mean age: 42.8 yrs; 39 males; 43 White; 37 Black) with verified JNC8 defined pre-HTN on 3 consecutive sessions (mean SBP: 128.3 mmHg; 95% recruitment rate) were randomly assigned to TT or healthy lifestyle attention control groups. Each group received the same twice-daily dosage schedule (month 1: 15 min, months 2-3: 10 min; months 4-12: 5min).

Results: Mixed modeling results revealed a significant group x time effect for SBP ($p < .01$). Post hoc analyses indicated the TT group showed greater SBP reductions at months 3: -9.2 vs -2.8, 6: -9.2 vs -1.6 and 12: -10.7 vs -2.8 mmHg (all $ps < .01$). Average adherence across the 12 months was higher in the TT group: month 1: 75.0% vs 62.4%, month 3: 75.3% vs 56.9%; month 6: 72.9% vs 48.6%; and month 12: 62.9% vs 43.2% (all $ps < .01$).

Conclusion: The TT app is acceptable, sustainable and shows promise in reducing SBP in adults with pre-HTN. Preparations are underway for a large-scale efficacy RCT.

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C147

6:15 PM-7:30 PM

A COMMUNITY-BASED DIETARY INTERVENTION TO REDUCE CARDIOVASCULAR DISEASE RISK FACTORS IN A LOW INCOME, MINORITY POPULATION

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Introduction: The disparity of cardiovascular disease (CVD) in underserved, low-income and ethnic minority communities has been well documented. Low-income populations experience higher rates of CVD-related complications, emergency room visits, in-patient hospitalizations, and mortality when compared to other groups. Confounding socio-economic factors include less access to primary care and higher uninsured rates.

Methods: The "Fruit and Veggies for Kidney Health" study was designed to improve chronic kidney disease (CKD) outcomes and reduce CVD risk in a primarily low-income, African American (AA) population by providing access to base-producing fresh fruits and vegetables (F & V) in a South Dallas food desert. We conducted participant recruitment and screening at various local churches and community health fairs. All participant visits occurred at the Baylor Scott & White Health and Wellness Center, a research and population health entity of Baylor Scott & White Health. Participants were enrolled and randomized to one of two study arms: free F & V for 6 weeks (F & V only) or free F & V with educational cooking and nutrition class for 6 weeks (F & V + Cook). Participants ($n=97$) were 100% AA, aged 55.2 ± 11.7 years, and 46.8% low-income ($< \$25,000$).

Results: At baseline, participants had BMI 34.9 ± 8.4 kg/m², 62.9% had high blood pressure (SBP ≥ 130 or DBP ≥ 80) and 28.9% had diabetes (HbA1c $\geq 6.5\%$). 87% of participants completed at least 5 scheduled visits within 6 weeks. Average post intervention (6-weeks from baseline) vs. baseline intake was higher for both fruits (whole or cut fruit, except juice) (3.0 ± 2.8 vs. 1.6 ± 2.1 cups/day, $p < 0.0001$) and vegetables (5.2 ± 3.5 vs. 3.7 ± 2.9 , $p < 0.01$). Pre/post analyses showed reductions in systolic blood pressure of 4.1 ± 15.1 ($p = 0.02$) and HbA1c by $0.26 \pm 0.70\%$ ($p < 0.01$) among participants. These preliminary data showed no statistically significant changes in body mass index or diastolic blood pressure, however the study is ongoing.

Discussion: The "Fruit and Veggies for Kidney Health" study employs an innovative approach to screening by leveraging trusted community-based institutions and employs an innovative intervention of F&V that is directly accessible to community residents to reduce CVD risk factors and thereby reduce health disparities and possibly improve CKD and CVD outcomes within low-income, ethnic minority groups at a population level. Furthermore, the study may lead to development of cost-effective models to reduce the healthcare burden of CKD and CVD in the community.

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CITATION AND MERITORIOUS AWARD WINNER C148

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REAPPRAISAL PREDICTS GREATER RESPIRATORY SINUS ARRHYTHMIA AMONG BEREAVED ADULTS

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Bereaved adults experience heightened cardiovascular risk during a time when they must cope with the profound stressor of their loss. Greater cardiac vagal control, indexed by higher respiratory sinus arrhythmia (RSA), is associated with better cardiovascular health on one hand, and with adaptive coping and emotion regulation on the other. Greater use of reappraisal, an emotion regulation strategy that involves changing how one thinks about a situation in order to regulate emotion—has been linked higher RSA in diverse populations. We anticipated we would find a positive relationship between RSA and reappraisal among bereaved adults. We examined preliminary data from the Emotion Regulation Diary Study. For this study, adults within the first year of bereavement of a family member or close loved one were recruited in a mid-sized Southwestern city. Participants completed a set of initial questionnaires prior to completing a 14-day daily diary, and then returned for collection of cardiovascular data including ECG during an emotion elicitation protocol. Data from the first 41 bereaved adults to complete the study ($M = 67$, $SD = 14.51$) was analyzed. Reappraisal was derived from the Emotion Regulation Questionnaire (ERQ), a 10-item Likert scale (1 = strongly disagree, 7 = strongly agree) that queries reappraisal and suppression strategies, among the initial survey measures. Resting RSA was collected via ECG approximately 14 days later, during a 10 minute resting baseline. Frequency domain analyses were used in Mindware 3.2 software to derive log-transformed HF/RSA. Regression analyses found that higher reappraisal scores predicted greater RSA, adjusting for age, emotional suppression, and bereavement symptom severity ($B = .55$, $SE = .25$, $p = .037$). Although these results do not establish a causal link, they provide evidence that emotion regulation strategies may play a role in the cardiovascular health of bereaved people. Accordingly, emotion regulation is an appropriate target for bereavement research, and may inform health interventions that can reduce risk of morbidity and mortality among bereaved people.

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C149

6:15 PM-7:30 PM

PATIENT PERCEPTIONS OF CHF AND BARRIERS TO PHYSICAL ACTIVITY: FEASIBILITY TESTING OF A CUSTOMIZABLE PA INTERVENTION

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Introduction: Congestive Heart Failure (CHF) is a common and debilitating condition. It afflicts nearly 6.5 million adults in the US and about half die within 5 years of diagnosis. Physical activity (PA) of both light and moderate-vigorous intensity reduces risk of hospitalization and mortality. Despite this, fewer than 10% of patients achieve currently recommended goals. Barriers to PA may include anticipated symptoms, fear these indicate worsening of heart function, and perception that developing a vigorous routine is an insurmountable task. The goal of the present project is to develop an intervention assisting patients to more accurately interpret PA-related symptoms, set achievable and progressive goals for increasing PA, and provide objective feedback on progress to optimize long-term maintenance.

Methods: The prototype pilot intervention is based upon a revised "Move More Sit Less" toolkit, integrated symptom assessment log, Fitbit device for tracking activity and sleep, and related Smartphone application. Participants are contacted weekly to set step goals, document intensity/severity of symptoms, and report issues/concerns. All data is collected and stored in REDCap.

Results: Three participants aged 41, 51, and 69 (2 men and 1 woman) with average CHF ACC/AHA Stage C were recruited from the Heart and Vascular Clinic at a tertiary academic medical center to test the intervention process and provide detailed feedback. Participants had an average of 3 comorbidities, and took a range of 11 - 28 medications daily. Each participant identified a primary symptom of concern (i.e. fatigue, shortness of breath, chest pain). Baseline step values averaged 5 to 10 thousand per day and increased throughout the 4-week feasibility trial. All participants consistently wore the Fitbit and successfully tracked daily symptom experience. The greatest difficulty was initially downloading and syncing the Fitbit and Smartphone applications. All three pilot participants have been rolled over into a three-month intervention.

Conclusion: This project demonstrated feasibility of using a publicly available PA toolkit integrated with symptom assessment and objective tracking and feedback on PA for engaging CHF patients in active behavior change. Patients expressed increased awareness of sedentary behavior and symptom management while giving insight for future improvements. A 3-month intervention with 30 participants is currently underway.

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C150

6:15 PM-7:30 PM

MULTIDISCIPLINARY IMPLEMENTATION OF A POPULATION HEALTH MANAGEMENT INTERVENTION FOR CARDIOVASCULAR DISEASE RISK FACTORS

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Background: Implementing population-level interventions within a healthcare system requires longitudinal stakeholder involvement and multidisciplinary expertise. We sought to improve cardiovascular disease (CVD) risk among rural Veterans via an intervention addressing multi-level barriers including provider (competing demands), patient (risk awareness), and system (under-empowered teams). We describe a multidisciplinary team approach to intervention adaptation and implementation informed by structured consultation with key stakeholders.

Methods: Our team included a: behavioralist, clinical interventionist, primary care physician, implementation scientist, nurse scientist, project coordinators, and a clinical nurse. We developed an intervention to: 1) identify patients with uncontrolled blood pressure and/or with hyperlipidemia but not on statin therapy; 2) activate patients via personalized letters; 3) identify behavioral goals guided by patient preferences; and, 4) communicate patient goals and suggested CVD risk reduction plan to primary care. Stakeholder engagement activities included: input from existing CVD programs, feedback from Veterans Research Engagement Panel, and clinic-level debriefings. Our biweekly intervention debriefs were guided by the Stirman Adaptation Framework.

Findings: To date, 100 patients received activation letters. Of that number our population health manager was able to speak with 69; 38/46 Veterans kept scheduled appointments with their providers after receiving the intervention, and 33/54 Veterans that did not have a scheduled appointment with a provider made one. Notably, after the intervention, 54/100 Veterans initiated contact with a healthcare provider (ie, primary care physician or specialist) to have their blood pressure checked, medications modified, or obtain a referral for another provider or service (e.g., weight loss, smoking cessation). In addition, we identified critical adaptations to facilitate uptake within VA clinical practice including message tailoring, timing of activation letters, and alignment with ongoing primary care practices.

Conclusions: A collaborative team of multidisciplinary researchers can inform intervention adaptation, build stakeholder buy-in, and facilitate the development of a sustainable intervention within a clinical practice setting. The VA is an ideal venue for team-based implementation science and real-time adaptation of population-level interventions. Our project lays an important foundation for developing rigorous and relevant interventions that will assure that rural Veterans have access to effective, context-appropriate CVD risk management options.

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6:15 PM-7:30 PM

A SYSTEMATIC REVIEW OF PSYCHOSOCIAL CORRELATES OF PAIN IN PEDIATRIC INFLAMMATORY BOWEL DISEASE

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Background: Pain is a common symptom in pediatric inflammatory bowel disease (IBD) and is associated with poor psychological and disease outcomes and increased healthcare use. Pain in pediatric IBD has traditionally been attributed to disease activity, yet there is emerging evidence in adults that psychosocial correlates are stronger predictors of pain. This study aims to review the evidence for psychosocial correlates of pain in pediatric IBD within a developmental framework (child, parent, and family-level correlates of pain) to identify gaps in knowledge and inform future research.

Methods: A systematic review was conducted using a comprehensive search (MEDLINE, Embase, PsycINFO). Inclusion criteria was 1) pediatric samples (< 19 years) with an IBD diagnosis; 2) associations between pain (intensity/severity or impact) and a psychosocial factor (individual, parent, family-level). N=2643 records were identified; N=11 met inclusion (20% abstracts double coded, 98% agreement). A narrative review was conducted. Quality was assessed via the NIH Quality Assessment Tool.

Results: Regarding child-level psychosocial correlates of pain, N=6 studies found significant associations between internalizing symptoms (anxiety and depression) and pain (small-large correlation magnitudes). N=2 studies found significant associations between catastrophizing and pain (small-large correlations). N=1 study each found a significant association between worry pain, and pain beliefs and pain. N=1 study found no significant association between active coping and pain. Regarding parent-level psychosocial correlates of child pain, one of two studies found a significant association between parent catastrophizing and pain. N=1 study examined parent stress and coping and found no significant associations with child pain. N=1 study examined parent protective responses and catastrophizing and found no significant associations with child pain. All associations were in the positive direction. No studies examined family-level factors (e.g., family stress, communication). Included studies were all cross-sectional; overall study quality was moderate.

Conclusions: Psychosocial factors are associated with pain in pediatric IBD, with the strongest evidence for an association between pain and child anxiety/depression symptoms and catastrophizing. Future studies are needed to more comprehensively measure pain and to examine parent-level and family-level factors.

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PERCEIVED PARENTAL INFLUENCE ON HEALTH BEHAVIORS IN LATINO ADOLESCENTS

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Background: Family-level factors such as parenting practices and parental support represent key social determinants of health for youth; however, more research examining family dynamics is needed to better understand familial influences on obesity-related health behaviors in adolescents. The purpose of this study was to examine qualitative narratives from Latino youth with obesity, to examine patterns of parental social support for healthy behaviors.

Methods: Latino adolescents (girls=8; boys=8; age=14.4±1.5) with obesity (BMI%=98.8±0.9) completed an in-depth interview of 10 semi-structured questions. Two coders used a constant comparison approach to capture emergent themes on parental influences on health behaviors including physical activity and diet.

Results: Youth reported living in parental households consisting of two parents (*N*=10), blended families (*N*=1), separated parents (*N*=2), or female headed household (*N*=3). The majority of youth (88%) described mom as a positive influence on health behaviors, reporting that mom typically provides healthy foods and motivation for physical activity. Moms were identified as the primary source of instrumental (31%) and emotional support (31%), with fewer reports (13%) of informational support for health behaviors. Just over half of participants (56%) described dad as a positive influence on health behaviors. Dads were frequently described as working long hours, too busy to play, or too tired. Dads primarily provided instrumental support (19%), with no reports of dads providing emotional support and few reports of dads providing informational support (13%). Five participants (all girls) described their dad as a negative influence on health behaviors. Some youth reported that instrumental (19%) and informational (6%) support was equally received from both parents; however, emotional support from both parents was not reported.

Conclusion: Consistent with cultural norms and values, moms were viewed as primary sources of support and resources to support health behaviors, whereas dads were less likely to be described as supportive and in a sub-sample of girls may even undermine health behaviors. Strategies that leverage parental roles and equip Latino parents with skills to support health behaviors are needed to address disparities in high-risk Latino youth

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OBESITY AND EATING DISORDER DISPARITIES AMONG SEXUAL AND GENDER MINORITY YOUTH: FINDINGS FROM THE ABCD STUDY

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Background: Sexual and gender minority (SGM) youth may be at increased risk for eating and weight disorders compared to non-SGM youth. Though many youth identify as gay or gender non-conforming in childhood, the majority of studies assess older adolescents and rely on self-reported height and weight. Determining whether health disparities emerge prior to adolescence may have important implications for prevention. The current study, therefore, utilized data from the Adolescent Brain and Cognitive Development (ABCD) study to compare the prevalence of obesity and eating disorders among SGM and non-SGM youth.

Methods: Children underwent an in-person assessment including measured height and weight and self-report questions about sexual orientation and gender identity. The KSADS was administered to assess both sub- and full-threshold eating disorders. Logistic regressions, adjusting for sex assigned at birth, age, race, and family income were conducted to test for differences in obesity status and eating disorder presence among SGM youth versus non-SGM youth.

Results: The study comprised 4,448 participants (*Age*: 10.0y; *MBMI*%ile: 59.84; 47.3% female; 57.8% nonHispanic white), of whom 58 (1.3%) were probable sexual (*n* = 42) and/or gender (*n* = 23) minorities. The prevalence of obesity among SGM and non-SGM youth was 25.9% and 15.1%, respectively. Adjusting for covariates, SGM youth were significantly more likely to have obesity compared to their non-SGM peers (OR: 2.69, *p* = .002). More specifically, SGM females were 2.65 times more likely to have obesity compared to non-SGM females and SGM males were 2.87 times more likely to have obesity than non-SGM males (*ps* < .038). SGM youth were not significantly more likely to have an eating disorder as compared to non-SGM youth (12.1% and 10.3%, respectively). However, SGM males were significantly more likely to have an eating disorder compared to non-SGM males (OR: 5.23, *p* = .004).

Conclusion: Results indicate that SGM youth are significantly more likely to have obesity compared to their non-SGM peers, and that SGM males are significantly more likely to have an eating disorder as compared to non-SGM males. This study indicates that weight and eating disorder disparities in SGM youth may begin in childhood. Research is needed to elucidate the mechanisms that contribute to health disparities in this population.

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SOCIAL MEDIA USE AND THE PSYCHOLOGICAL WELL-BEING OF SCHOOL AGED CHILDREN

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Heavy use of social media has been shown to negatively impact children's body image, self-esteem, and overall psychological well-being (Richards, Caldwell & Go, 2015; Ahadzadeh, Ong, & Sharif, 2016). The current study investigated the relationship between social media use, body image, and anxiety with school age children. Further, social media use was investigated via parent-report and directly from children's cell phones. This study is the first to compare actual and perceived child social media use.

A total of 102 participants between 8 and 17 years old ($M = 14.09$ $SD = 1.86$) participated in this study. The sample was 82% White, and 53% female. Participants responded to paper and pencil questionnaires evaluating their media influence, body image, and anxiety in addition to having their cell phone system settings examined for actual time spent on social media in hours.

Pearson's Correlations and t-tests were conducted to examine perceived and actual media use. While parent-reported time for self and child time on social media related ($r = .573$, $p = .000$), parents drastically over-reported their child's time spent on social media with parent reported child use in hours per week ($M = 21.04$, $SD = 17.35$) and child actual use by the phone recording ($M = 14.46$, $SD = 10.65$) differing significantly ($t(63) = 2.27$, $p = .012$). These results suggest that parents are not aware of how much time their child actually spends on social media.

There were also relationships found for child social media use recorded by phone and psychological variables. Social media use was positively related to media internalization ($r = .288$, $p = .018$) and media pressure ($r = .254$, $p = .038$), but was not related to anxiety ($r = -.157$, $p = .197$).

Further, an independent samples t-test was conducted to compare the difference in participant gender in response to their awareness of how much the media influences their body image. A difference was seen between how the two genders feel aware of media's influence ($t(96) = 2.41$, $p = .018$), such that males were higher ($M = 2.11$, $SD = 0.61$) than females ($M = 1.81$, $SD = .60$). These results suggest that a child's gender and subsequent gender norms may influence the way they process media and how much awareness they have of the way that media impacts their body image perceptions.

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PARENT NATIVITY AND CHILD ASTHMA CONTROL IN MEXICAN-AMERICAN FAMILIES: A PSYCHOSOCIAL PERSPECTIVE

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Background: Prior research has demonstrated the protective effects of parent foreign nativity on childhood asthma outcomes in Mexican Americans. Some theories have been proposed to explain this association effect, but few studies have explored the psychosocial influences on this relationship. This study explored the roles of parent depression and social support on the parent nativity-child asthma control relationship.

Methods: Data were obtained from the Asthma Action at Erie trial (NCT02481986), a randomized comparative effectiveness trial designed to test community asthma interventions in parent-child dyads. The sample was restricted to Mexican American caregivers ($N=165$) to examine the nativity effect. Mediation and moderation analyses of parent depression and social support on the relationship between parent nativity and child asthma control were performed. Child asthma control was measured with the Childhood Asthma Control Test or Asthma Control Test (cACT/ACT); parental depression with the Patient Health Questionnaire (PHQ-9); and social support with the 24-item Patient-Reported Outcomes Measurement Information System (PROMIS) social support scales (subscales of emotional, informational, and instrumental support). Analyses also examined the association between parent nativity and child asthma control across duration of years in the U.S. for Mexico-born parents.

Results: As predicted, the protective effects of foreign parent nativity on child asthma control were observed; children of Mexico-born parents had better asthma control ($Est=1.82$, $SE=0.86$, $p = .034$) compared to children of US-born parents. Among Mexico-born parents ($N=95$), a quadratic association indicated that child asthma control gradually declines with increasing number of years spent in the U.S. until the lowest point at 15 years, after which asthma control slowly improved and returned to baseline. US-born parents reported more symptoms of depression than Mexico-born parents ($Est=-1.59$; $SE = 0.41$, $p < .001$). Parent depression was found to mediate the pathway between parental nativity and childhood asthma control ($p < .001$). Instrumental support was found to moderate this relationship (Instrumental Support x Nativity $Est=-0.10$, $SE=0.05$, $p=.04$). Emotional and informational support were not significant moderators of the nativity-asthma relationship.

Conclusions: Parental depression may help explain the relationship between parental nativity and childhood asthma control in Mexican Americans. Social support, particularly instrumental support, strengthens the protective nativity effect on child asthma control. When developing pediatric asthma interventions, considerations to address parental depression and social support are critical in Mexican American families.

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INTERNALIZING AND EXTERNALIZING SYMPTOMS AS MEDIATORS OF ASSOC BETWEEN COG FLEXIBILITY AND FAMILY CONFLICT IN TEENS WITH T1D

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Introduction: Teens with type 1 diabetes experience increased family conflict, especially around topics related to diabetes care, and this increased family conflict contributes to lower quality of life and less optimal disease management. Moreover, diabetes family conflict is even more pronounced in teens with co-morbid type 1 diabetes and psychopathology. Difficulties in cognitive flexibility have been associated with higher family conflict and psychopathology in teens without type 1 diabetes. However, cognitive flexibility has not been examined in the context of higher family conflict and psychopathology in teens with type 1 diabetes. It was hypothesized that decreased teen cognitive flexibility would be associated with increased diabetes family conflict in part through increased teen internalizing and externalizing symptoms.

Methods: Ninety-three teens with type 1 diabetes and their parents participated in similar baseline surveys for a diabetes intervention and/or neuroimaging study. Measures included parent report on cognitive flexibility via the Behavior Rating Inventory of Executive Function, Shift subscale, on internalizing and externalizing psychopathology via the Child Behavior Checklist, and on the Revised Diabetes Family Conflict Scale. Linear regression analyses were conducted to test for mediation separately for internalizing and externalizing symptoms while controlling for pump status and length of diagnosis.

Results: First, increased problems with cognitive flexibility were associated with increased diabetes family conflict ($b = .202$, $t(93) = 3.717$, $p < .001$). Increased problems with cognitive flexibility were also associated with internalizing symptoms ($b = .445$, $t(93) = 5.431$, $p < .001$) and externalizing symptoms ($b = .428$, $t(93) = 5.434$, $p < .001$). When cognitive flexibility and internalizing or externalizing symptoms were examined together, results were consistent with mediation: increases in both mediators (internalizing and externalizing symptoms), controlling for cognitive flexibility, were significantly associated with increased diabetes family conflict ($b = .249$, $t(93) = 3.764$, $p < .001$ and $b = .289$, $t(93) = 4.287$, $p < .001$, respectively) and cognitive flexibility was no longer a significant predictor of diabetes family conflict (p 's $> .05$).

Conclusion: Consistent with full mediation, the findings suggest that increased internalizing and externalizing symptoms explained the association between decreased cognitive flexibility and increased diabetes family conflict. Cognitive flexibility may be an important target for intervention in high-conflict families with teens experiencing co-morbid type 1 diabetes and psychopathology.

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MULTI-LEVEL SOCIAL CONTEXTUAL INFLUENCES ON ASTHMA CARE AMONG FAMILY CAREGIVERS

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Background: Pediatric asthma management often occurs outside of clinical encounters. Limited understanding of how multiple levels of the social context can influence family asthma management practices may constrain providers' ability to best serve families of children with asthma. We explored this issue among caregivers of children with asthma.

Methods: 41 caregivers of children (< 18 years old) with asthma were interviewed using an adapted McGill Illness Narrative Interview. Most caregivers were black (80%) and/or had low SES (78%). The age range of the children was wide; 7 caregivers had children age 0-4, 22 caregivers' children were age 5-11, and 12 caregivers' children were age 12-17. Caregivers were from St. Louis, Missouri ($n=25$) or Gainesville, Florida ($n=16$). We performed deductive and inductive coding and made constant comparison of codes and cases (e.g., across sites; between SES categories).

Results: 5 primary themes shaped caregivers experiences: (1) the child's health history and agency (i.e., their ability to take independent action and/or influence the surrounding environment and people); (2) household dynamics and division of labor; (3) the local context, including environmental and housing factors as well as schooling; (4) political and economic processes, including the structure of the healthcare and social welfare systems; and (5) the different ways of conceptualizing the meanings of childhood. We also found evidence linking provider misunderstandings of these social contextual elements to provider-caregiver relations and trust.

Conclusion: Caregivers identified multiple levels of the social context that affected their experience of caregiving. We place caregiver experience at the center of these levels (child; household; local context; larger-scale processes), which were interrelated and interdependent. We demonstrate that these contextual factors can shape and challenge asthma management by complicating understandings of caregiving and caregiver responsibility. We suggest ways to improve clinical interactions with caregivers. We also identify the need for policy change to address structural factors that constrain caregivers' ability to mitigate asthma symptoms.

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MINDFULNESS, PROBLEMATIC INTERNET USE AND EMOTIONAL HEALTH AMONG COLLEGE STUDENTS

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Dispositional mindfulness has been associated with several high risk behaviors such as problematic alcohol use, drug use, and distracted driving (Bodenlos et al., 2013; Brett et al., 2017; Christopher et al., 2013). It has also been negatively associated with addiction cravings among adults (Baker et al 2019). One high risk behavior that has been gaining attention in its link to mindfulness is problematic internet use. This behavior has been associated with several poor emotional and physical health outcomes among college age students such as depression, anxiety, poor sleep, BMI, and general health (Kawabe et al., 2016; Canan et al., 2014; Lam, 2014). Higher levels of mindfulness have been associated with lower likelihood of preference for online social interactions and better regulation of internet use (Gámez-Guadix & Calvete 2016). Dispositional mindfulness has also been associated with better physical and emotional health (Bodenlos et al., 2015; Grossman et al., 2004; Roberts and Danoff-Burg, 2010). The current study sought to examine the relationship between mindfulness and emotional health. The primary aim was to determine if problematic internet use was a mediator in the relationship between mindfulness and emotional health. Participants were 353 undergraduate students from a college in the Northeast. Participants completed the Five Facet Mindfulness Questionnaire (FFMQ), the Internet Addiction Scale (IAT), and the emotional functioning subscale of the SF-36 (Medical Outcomes Study Short Form Survey). Controlling for both age and gender, results suggested that students' levels of problematic internet use mediated the association between their levels of mindfulness and emotional health. Specifically, higher levels of mindfulness were associated with lower levels of problematic internet use, which, in turn, were associated with higher levels of emotional health. This data provides initial evidence as to how mindfulness could improve health specifically through its effects on screen time and internet use.

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EXPLORING SUBGROUP RESPONSE IN A STUDY OF YOGA FOR VETERANS WITH CLBP

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Chronic low back pain (cLBP) is a debilitating health problem. It is the third most common reason for physician visits and one of the most common reasons for prescribing opioids. Updated cLBP clinical practice guidelines highlight an inclusion of more effective non-pharmacological treatments. Yoga is a non-pharmacological treatment with substantial evidence supporting its use. Studies of yoga have indicated differential effects of yoga's effects on medical conditions based on gender and age. A recent clinical trial with 150 military veterans found that veterans assigned to yoga reported significantly greater improvements in disability, pain severity and interference, fatigue, and quality of life. Our objective was to examine whether sociodemographic subgroups responded differently to yoga in the prior study.

We conducted secondary analyses of data from the previous RCT, employing correlations and linear regression to identify relevant variables and examine whether they were associated with a clinically significant reduction in back-pain related disability at 6 months. Disability was measured with the Roland-Morris Disability Questionnaire. Experts have established that a 30% reduction in RMDQ scores is an optimal marker for a clinically significant reduction in disability. First, we selected demographic variables that had been correlated with group assignment or the reduction in disability scores in previous analyses. Gender, age, and homelessness in the last 5 years met this criterion. We then ran a series of linear regressions adding these variables to the group assignment variable showing yoga participants had greater reductions in disability.

Yoga group assignment remained significant throughout. Gender was marginally significant when added ($p = 0.062$). History of homelessness was not significant when added to the model. Age was significant when added ($p = 0.024$) and gender became a less relevant predictor ($p = 0.167$). RMDQ score was 0.008 lower for each additional year of age. Women were significantly younger than men in the overall sample (48.0 vs 55.5, $p = 0.002$) and trended toward a higher rate of clinical improvement in the whole sample (56% vs 36%, $p = 0.091$) and in the yoga group (77% vs 51%, $p = 0.090$).

In conclusion, younger age, and to some extent female gender, were associated with a higher rate of clinically significant reductions in disability after a yoga intervention for veterans with cLBP.

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ATTITUDES TOWARD SPIRITUALLY INTEGRATED INTERVENTIONS IN PSYCHIATRIC INPATIENTS

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Recent efforts have sought to obtain a more complex and nuanced understanding of spirituality and health correlates that have implications for clinical practice. This study described attitudes toward specific strategies for incorporating spirituality in psychotherapy and clarified whether patient's attitudes toward spiritually integrated care might be associated with overall spirituality and prominent forms of spiritual struggles. This sample was recruited from seven inpatient psychiatric units at a non-profit behavioral health center in the Midwest. The inpatients (N=230) averaged 31.83 years of age ($SD = 14.84$), were predominantly female (59%), and Caucasian (85%) followed by Black (4.8%), LatinX (3.9%), Other (3.9%) and Multiracial (3%). A correlational design was used to examine associations among these measures at intake: Spiritual Transcendence Index, Religious and Spiritual Struggles Scale (RSSS), and the Perceived Appropriateness of Spiritually Integrated Interventions Scale. Using hierarchical regression, spiritual transcendence explained a significant portion of variance in patients' overall attitudes toward incorporating spiritual interventions in psychotherapy or counseling, $\Delta R^2 = .29$, $F_{\text{change}}(1, 228) = 90.76$, $p < .001$. The addition of the RSSS subscales in the second model further added to the explained variance, $\Delta R^2 = .08$, $F_{\text{change}}(6, 222) = 4.54$, $p < .001$. In the final model, patients who derived a stronger sense of transcendence from their spirituality, $p < .001$, those who were experiencing moral struggles at the time of seeking care, $p = .047$, and Caucasian patients, $p = .016$, were more likely to report favorable attitudes toward spiritually integrated care. Spiritual transcendence and moral struggles may be important factors that inform patient's preferences for spiritually integrated care.

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UTILIZING FAITH BASED VOLUNTEERS TO DELIVERY CARE COORDINATION TO REDUCE HOSPITAL UTILIZATION

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Background: Evidence suggests that preventive health programs in faith-based organizations can improve health outcomes. However, the effect of faith-based programs in reducing emergency department (ED) and inpatient services use is not clear. In this study, we compared hospital utilization of patients enrolled in a faith-based delivery care coordination program versus a matched eligible but unenrolled referent group of patients.

Methods: This observational study included 128 patients (68% women, mean[SD] age: 68.1 [13.5], 61% White, 30% African-American, and 12% uninsured) who visited Baylor Scott and White Health (BSWH) emergency and inpatient departments. Sixty-four patients self-selected to enroll in the faith-based delivery care coordination program from 2016 to 2019. A referent group (n=64) was selected from the hospital's electronic health record (EHR) system using a propensity score measured from demographic and past clinical attributes. Hospital utilization data was obtained from the EHR for one year for intervention and referent groups. In partnership with BSWH, the Faith in Action Initiative trains volunteers from local churches to become Faith Community Caregivers (FCCs). For a year, FCCs spend one hour/week with a patient to serve as an advocate/health translator, help pick up prescriptions, and encourage adherence to plan of care, medication regimen and follow up appointments. The primary outcomes were the number of ED visits and inpatient visits during the follow-up year. Cox-proportional hazard models were used to estimate an additional risk of ED and inpatient department visit.

Results: Compared to the referent group, the patients in the faith-based delivery care coordination program were 22% less likely to experience an additional ED visit during the one-year follow-up time (hazard ratio = 0.78, p-value = 0.04). Despite the overall benefit of the intervention on reducing the ED visits, African-American patients were 2.2 times more likely to experience an additional ED visit (hazard ratio = 2.2, p-value < 0.0001) in comparison to the Whites. There was no significant difference in the number of inpatient visits (hazard ratio = 1.11, p-value = 0.60) between the intervention and referent groups.

Conclusions: The faith-based delivery care coordination program, Faith in Action Initiative, was effective in reducing ED visits, but did not significantly reduce inpatient visits. Future research should evaluate participant characteristics, volunteer attributes, and intervention implementation to optimize the program on health care outcomes.

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FIT WITH FAITH

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Chronic disease prevalence is high among clergy, yet their lifestyles make it difficult to engage them in health programs. Spouses are a source of support, especially in promotion of healthy eating and physical activity. Health disparities impacting the US also impact clergy putting African-American clergy at risk for negative health outcomes. *Fit with Faith* tested the feasibility and impact of a 10-week, multiple-behavior change intervention for African-American clergy and spouses. The curriculum was informed by focus groups, which encouraged a combination of eHealth and traditional components: 3 face-to-face sessions, 3 phone calls, 5 competitions (e.g., who can track the most days), weekly emailed educational materials, daily interactions on the MyFitnessPal app. Assessments were taken pre- and post-intervention and included height, weight, waist and hip circumferences, and blood pressure measured by staff. Diet was assessed using NCI's online 24-hour recall system, physical activity via accelerometer, and demographics and psychometrics using online surveys. Data were normally distributed and paired samples t-tests used to examine differences in pre-post outcomes. Participants (n= 20, 10 couples) were on average 51.1±13.5 years old, obese (60%) and had elevated blood pressure (70%). Most participants attended all meetings (70%) and most calls (50-65%) but did not engage in any competitions (70%) or with the app (50-75%, no activity). There was a statistically significant decrease in BMI from pre (31.9±1.93) to post intervention (31.5±1.89, $t(19) = 2.65$, $p = 0.02$). No difference was seen in calories consumed, but a statistically significant increase was seen in fiber pre (12.4±6.68) to post intervention (17.0±9.27, $t(12) = -2.51$, $p = 0.03$). No differences were seen in steps taken or minutes of moderate-to-vigorous physical activity. A statistically significant increase was seen in self-regulation cognitive items from pre (17.8±3.63) to post intervention (20.2±3.01, $t(18) = -3.01$, $p = 0.01$). While not statistically significant, blood pressure decreased but increases were seen in occupational distress and perceived stress. *Fit with Faith* showed modest success given the small sample and short duration of this pilot study. Future research should examine how to reach this population since eHealth components were not successful. Additional research is needed on stress, which participants either became more aware of or slightly increased during the study.

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EXPLAINING THE SPIRITUALITY-HEALTH RELATIONSHIP: THE ROLE OF DIFFERENT TYPES OF POSITIVE AFFECT

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Spirituality has been found to predict physical health in numerous studies, leading some investigators to suggest that spirituality may play a causal role in promoting health. To explain this relationship, investigators have proposed a variety of mediating variables (e.g., self-regulatory ability, health-protective behaviors, meaning in life). More recently, researchers have also begun to consider the salutary role of positive emotions in this context. However, which positive emotions might be serving as the 'active ingredients' in the spirituality-health relationship remains unclear. In the current investigation, we focus on three different types of positive affect associated with both spirituality and health that have rarely been examined simultaneously in this context: awe, joy and contentment. As part of a larger cross-sectional survey study, items from previously validated measures of physical health, spirituality, awe, joy and contentment were administered to a sample of young adults (n=254). Bivariate correlations indicated that although the measures of positive affect were correlated, with most r 's in the .40's and .50's, their level of association was not high enough to preclude examining each variable individually. Each of the positive affect variables also correlated significantly with both spirituality and health, with r 's ranging from .13 to .31. Using regression based, mediational analyses, awe (Sobel $z = 2.36$, $p = .018$), joy (Sobel $z = 1.91$, $p = .056$) and contentment (Sobel $z = 2.24$, $p = .025$) met conservative criteria for acting as partial mediators. Multiple mediation procedures utilizing bootstrapping were then used to examine all three mediators simultaneously; indirect effects and the 95% CI were computed for each of 5,000 bootstrapped samples. In terms of the relation between spirituality and physical health, neither joy (indirect effect = -.0059, 95% CI [-.0258, .0105]) nor awe (indirect effect = .0133, 95% CI [-.0044, .0364]) remained significant. However, contentment did (indirect effect = .0168, 95% CI [.0012, .0420]). Though correlational, the results suggest that of the three, contentment may serve as the primary 'active ingredient' in the spirituality-health relationship. These findings shed light on the complex role of affect in the spirituality-health relation and also suggest that interventions including a spiritual component may benefit by specifically emphasizing practices that foster feelings of contentment.

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EXPLORING CANCER PATIENTS' DECISION-MAKING AFTER FERTILITY PRESERVATION COUNSELING: A MIXED METHODS ANALYSIS

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Background: Cancer survival rates are high, but leading cancer therapies pose high infertility risk. Future fertility is a significant concern identified by cancer patients of reproductive age. National guidelines recommend fertility preservation counseling (FPC) between diagnosis and treatment, but FPC provision is currently lacking; cancer survivors report high levels of decisional conflict about fertility preservation. The current study explored how a designated FPC patient navigator facilitated decision-making about fertility preservation.

Methods: Using a mixed-methods study design, cancer patients of reproductive age ($N = 49$) were retrospectively recruited from a large university hospital to participate in a cross-sectional survey and semi-structured interview. A validated decisional conflict scale and its subscales (informed, values clarity, uncertainty, support) were administered, and scores were interpreted on a 100-point scale (< 37.5 = low decisional conflict). Interviews lasted up to one hour and included questions about decisional conflict. Two coders used deductive content analysis guided by decisional conflict subscales. We present the means for each subscale, followed by insight from the interviews.

Results: Coders were reliable at Krippendorff's $\alpha = .96$. Most participants were female ($n = 38$; 77.5%), experienced low decisional conflict ($M_{\text{overall}} = 21.7$), and did not preserve fertility ($n = 31$; 63.2%); all subscale scores also indicate low decisional conflict. Yet, interview data suggest some participants felt uncertainty or regret about fertility decisions. Participants scored highest on the informed subscale ($M_{\text{informed}} = 31.4$). A multidisciplinary team approach, supplemented with written materials, supported informed decision-making. However, some participants were overwhelmed and felt that information about side effects, treatment efficacy, and follow-up in survivorship was missing. FPC effectively provoked values clarity ($M_{\text{values}} = 28.8$), which was influenced by life stage (e.g., age, relationship status, parity), morals, and perceived treatment urgency. Ultimately, most patients felt certain about their decision ($M_{\text{certainty}} = 21.7$) because they were afforded some control over their reproductive future. Participants felt well supported in decision-making ($M_{\text{support}} = 18.1$). FPC patient navigation allowed patients to receive instrumental support from providers and emotional support from family members.

Discussion: Patient navigators can optimize preference-sensitive decision-making about fertility preservation among cancer patients by coordinating a multidisciplinary approach to FPC. Results indicate some unmet information needs may increase decisional conflict. Future research should investigate which specific processes within the FPC patient navigation model are associated with reduced decisional conflict.

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LIMITATIONS OF CURRENT ASSESSMENTS OF DON'T KNOW RESPONDING IN PERCEIVED RISK STUDIES: IMPLICATIONS FOR DECISION MAKING THEORY

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Theories typically assume individuals have risk perceptions and use them to make health decisions. However, 47% percent of a US population representative sample say they do not know (DK) their risk for colorectal cancer when given DK as a response option. Potentially contributing to this disconnect is that studies may not adequately assess DK responses. We examined assessment practices for studies that examine the relation of perceived risk for colorectal cancer to engagement in colorectal cancer screening.

Methods: A meta-analysis conducted by Atkinson et al (2015) identified 58 published articles assessing both perceived risk for colorectal cancer and screening behavior. We coded each article for: a) whether a DK response was assessed; b) if so, if it was included as a response option or only coded if spontaneously generated by a participant; and c) how DK responses were treated in analyses. The meta-analysis reported effect size was used to examine the effect of assessment practice on observed risk-behavior relations.

Results: Of the 58 studies, only 5 measured or coded DK responses. 2 of the 5 included a DK response option, whereas the other 3 only coded a DK response if a participant spontaneously generated it. The overall average effect size for the 5 studies that included a DK response was 0.05, relative to 0.13 for those that did not include a response option. Only 1 study reported the rate of DK responses -- for that study, the rate was comparable to other colorectal cancer DK studies (37% DK response rate). All studies that provided or coded a DK response treated those responses as missing data. For studies that did not provide an option, very few report missing data rates, but those that do have rates that suggest a substantial proportion of "potential" DK responses (up to 22% missing data). Similarly, very few studies report distributions of responses but those that do have distributions consistent with a meaningful number of participants having a lack of knowledge about their risk (e.g., an overrepresentation of responses in the lowest possible risk category).

DISCUSSION: Although work assessing DK responses suggest that they are highly prevalent in the population, the overwhelming majority of risk perception studies fail to assess or account for DK responses. Not only does this impact scientific understanding of the prevalence of not knowing one's risk but may also impact scientific understanding of perceived risk-behavior relations.

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COMMUNICATING EFFECTIVELY: EXPLORING PATIENT EMPOWERMENT IN SURGICAL CONSULTATIONS

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Background: Effective communication is critical for facilitating patient outcomes such as adherence and satisfaction. Most of the literature examining healthcare communication focuses on the clinician's role and techniques medical professionals can employ to improve their communication with patients. In contrast, relatively little evidence has highlighted the prevalence of patient-focused strategies for improving communication, such as patient empowerment.

Purpose: Our study sought to qualitatively explore the prevalence of patients' engagement during medical interactions via empowerment strategies to optimize communication with their physician.

Method: 146 audio recorded pre-surgical consultations between physicians and patients were analyzed along with questionnaire data collected before and after the consultation. Each transcript was closely examined to derive a comprehensive list of techniques used by patients within these interactions.

Results: Eight empowerment strategies were identified: *delaying the physician, summarizing the consultation, asking multiple questions, expressing personal goals, providing preparatory materials, disclosing an agenda, self-diagnosing, and verifying information*. Findings indicated that less than a third of patients utilized any strategy during their consultation. *Asking multiple questions* emerged most frequently, whereas *self-diagnosing* was rarely present. Productive strategies included *delaying the physician, summarizing the consultation, and expressing personal goals*, as they were linked to beneficial patient outcomes such as greater positive emotion, less negative emotion, and more favorable perceptions of the physician. *Verifying information, self-diagnosing, and disclosing an agenda* seemed less productive, as they were linked to greater negative emotions, less perceived control, and less favorable perceptions of the physician.

Conclusion: Our results reveal some seemingly empowering strategies patients utilize that may lead to counterproductive outcomes, as well as productive strategies that may empower patients and improve communication efficacy. Taken together, these findings offer novel insight that can be applied to the innovation of policy and practice interventions to emphasize effective strategies patients can employ to improve communication quality during medical interactions, establishing a more interactive dynamic between physicians and patients.

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RELATIONS AMONG AFFECT, URGE, SELF-EFFICACY, AND LAPSE BEHAVIOR DURING A QUIT ATTEMPT IN ASIAN AMERICAN EMERGING ADULTS

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Background: – Smoking is the leading cause of preventable chronic disease and death in the United States. Many smoking cessation interventions have been proved effective for encouraging initial quit attempts, however, the processes underlying the continued abstinence are still largely unknown. No trend of increase in the population cessation rate has been observed over the last two decades.

Conclusions: – As a step toward addressing this research gap, using a dual process model perspective, this study was designed to capture the joint influence of factors on lapse during quit attempts, by investigating concurrent and lagged associations between three automatic constructs, *positive affect, negative affect, and smoking urge*, one reflective construct, *abstinence self-efficacy*, and a specific behavioral outcome, *lapse*.

Methods: – 57 daily smoking Asian American emerging adults (Age 18-25 years, $M = 21.72$, $SD = 2.14$) were monitored during their 4-week quit attempts. During the attempts, personalized smartphone-based ecological momentary interventions were delivered to each participant as a reminder in their natural context. At the end of each day, participants were asked to complete the questionnaires that contained a set of questions regarding daily affect, smoking urge, abstinence self-efficacy, and number of cigarettes smoked since the previous questionnaire. Bivariate time series models were estimated for concurrent and lagged associations between daily affect, urge, self-efficacy, and lapses status.

Results: – Affects and urge had shorter-lived, acute effects than self-efficacy on lapse risk. Low levels of background self-efficacy were the strongest, direct predictor of increased future lapse risk ($r = -0.54$, $p < .01$), leading by 2 days. Lapses status was a significant predictor of next day relapse behavior ($r = 0.96$, $p < .01$). Affects, urge, and lapse behavior were shown to have bidirectional impact on each other.

Conclusions: – While specific action may require reflective rather than automatic processes, in order to sustain the cessation behavior during quit attempts, the first construct that is important is regulation of automatic components, such as controlling urges. Interventions that monitor momentary states of automatic components and provide a practice for reflective action based on the momentary changes, along with consideration of the variability in latency and lags of different factors, will result in more reliable access to prolonged abstinence maintenance during quit attempts.

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STUDENT EMPLOYMENT AND SOCIOECONOMIC STATUS ON MEDICAL CAREER-RELATED DECISION MAKING

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Background: The transformation of undergraduate students into physicians is a rigorous progression. When analyzing the medical school admissions process, a great deal of emphasis is placed on the pre-medical years. In a bid to ensure a competitive application, pre-medical students must consistently participate in an array of career-specific extracurricular experiences (e.g., undergraduate research, clinical volunteering), all while simultaneously tending to college coursework and personal responsibilities.

The decisions that undergraduate students make while in college are heavily influenced by a student's socioeconomic status (SES). One component of the classical decision-making theory focuses on determining desirability of an action based on costs and ramifications of outcomes. If a student of a lower SES has to make a choice between pursuing unpaid clinical shadowing for career-related development versus pursuing career-unrelated employment for potentially-needed income, then the costs and ramifications of each decision undoubtedly come into play. A student's sociodemographic status (e.g. first-generation student) also influences these decisions due to a lack of educational guidance from a parent or guardian.

Purpose: This cross-sectional study aims to explore the relationship between SES and 1) employment in pre-medical years, and 2) involvement in field-related extracurricular activities.

Methods: Data will be collected from approximately 200 pre-medical students in the form of a brief survey administered via Qualtrics. Survey questions will capture participant demographics, including SES status, employment, and ask about involvement in extracurricular activities.

Results: Survey data is currently being collected, with a projected completion date of January 2020. This study will examine the association between SES and key outcomes of interest, such as employment and extracurricular activities during pre-medical years. Secondary analyses will explore the previous associations in first-generation students. We hypothesize that a student of a lower SES will report working a greater number of hours and, thus, report decreased involvement in career-related extracurricular activities.

Additional Implications of Study: First-generation college students lack family members who possess post-secondary education. This potentially results in these students having less guidance on making career-related decisions, such as pursuing career-related extracurricular and employment opportunities. This study seeks to determine the varying impact of SES on this decision-making process.

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THE ROLE OF ANTICIPATED AFFECT IN HEALTH RISK INFORMATION AVOIDANCE

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Two studies (N = 684) examined the role of anticipated affect in the decision to learn or avoid health risk information. To our knowledge, the causal role of anticipated affect in information avoidance has not been investigated. In Study 1 participants completed a risk calculator for type 2 diabetes and were assigned to one of four essay conditions as part of a 2 (affect valence: positive, negative) x 2 (time: current, future) between-subjects design. After writing an essay about current or anticipated positive or negative affect, they received the opportunity to learn their risk feedback. Unfortunately, the manipulation did not influence affect in the expected way. As such, we examined the correlation between self-reported affect and the decision to learn or avoid risk feedback. The results indicated that negative anticipated affect was the only form of affect associated with the desire to avoid information—those anticipating negative affect in response to learning their diabetes results were more likely to avoid risk feedback. We designed Study 2 to extend the findings of Study 1 by focusing on a different form of negative anticipated affect: anticipated regret for avoiding information. We reasoned that anticipated regret about avoiding information might work to reduce information avoidance; therefore functioning in the opposite direction of negative anticipated affect toward bad news. Participants completed the same type 2 diabetes risk calculator used in Study 1. Next, participants assigned to the experimental condition responded to a short essay question prompting them to describe a time they felt regret and answered questions about possible anticipated regret. Participants in the control condition completed the same task, but focused on a neutral topic: modes of transportation. As in Study 1, participants then opted to either view or avoid their diabetes risk. The results revealed that those who focused on anticipated regret avoided their risk feedback (42%) less frequently than those in the control group (58%). Taken together, the results of these two studies suggest that although negative anticipated affect in response to risk results might relate to increased information avoidance, focusing on anticipated regret for avoiding those results can decrease health information avoidance. These results suggest the utility of future studies examining the causal role of affect in health information avoidance.

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STRESS AS A MODERATOR TO SELF-REGULATION FOR LATE ADOLESCENTS WITH TYPE 1 DIABETES

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Self-regulation is a key aspect of engaging in positive health behaviors to manage type 1 diabetes (T1D) and prevent serious health complications. Self-regulation skills such as Executive Functioning (EF) may be particularly important during late adolescence, but may be moderated by multiple life stressors as they begin to transition into emerging adulthood. We examined perceived stress as a moderator of the relationship of EF with T1D self-management behaviors and HbA1c. Seniors in high school ($N = 241$, female = 61.4%, M (SD) age = 17.74 (.38) years) with T1D completed performance-based measures of EF, self-reported problems in EF (i.e., BRIEF), perceived stress, and T1D self-management behaviors; a home assay kit measured HbA1c. Regression analyses showed stress was independently associated with lower self-management ($b = -.035$, $p < .001$) and higher (poorer) HbA1c ($b = .288$, $p = .048$). BRIEF was also related to lower self-management ($b = -.002$, $p < .000$), but not to HbA1c ($b = .011$, $p < .072$), and stress did not moderate these relationships. Performance EF was unrelated to self-management when entered simultaneously with stress ($b = .006$, $p = .134$), but stress remained associated with self-management ($b = -.034$, $p = .003$) and moderated the relationship of performance EF with self-management ($R^2 = .081$, $b = .015$, $p = .013$). At higher levels of stress, those with lower performance EF had worse self-management than those with higher EF (predicted means = .40 vs .47); at lower levels of stress, however, performance EF was unrelated to self-management (predicted means = .70 vs .68). Performance EF was related to lower HbA1c when entered simultaneously with stress ($b = -.171$, $p < .002$). Stress was not uniquely associated with HbA1c ($b = .264$, $p < .074$), but did moderate performance EF links to HbA1c ($R^2 = .131$, $b = -.185$, $p < .016$). Again, at higher levels of stress, those with lower EF had higher HbA1c than those with higher EF (predicted means = 8.92 vs 7.64); at lower levels of stress, EF was unrelated to HbA1c (predicted means = 7.88 vs 7.78). Results revealed that those with poorer EF capabilities may be challenged by stress during late adolescence. Helping those with poorer EF skills to develop stress management and coping strategies may be helpful for T1D health at this high-risk time of development.

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HEALTHCARE PROVIDER PERCEPTION OF DIABETIC PATIENT DISEASE MANAGEMENT AND USE OF REMOTE HEALTH TECHNOLOGY

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Background: Diabetes is estimated to affect one out of every ten adults in the United States. The aim of this study was to gather information from healthcare providers, specifically about a) perceived patient barriers and facilitators to managing their disease, b) the providers' own struggle with getting patients to effectively and consistently manage their disease, c) opinions on using remote health technology to treat diabetes, and d) the likelihood that they will use these technologies to treat diabetic patients in the future.

Methods: Healthcare providers from a low-income area in south Texas ($n = 8$) were recruited for a focus group discussion. Eligible participants were current healthcare providers who work with diabetic patients.

Results: Most of the healthcare providers who participated were registered nurses or nurse practitioners (75%, or 6/8), ranging in age from 39-80 years, and 75% (6/8) were female. Many themes emerged from the discussion. For instance, the most frequently-reported perceived patient barriers for diabetes self-management were: limited access to resources (i.e., healthier food, transportation to medical appointments, treatments that require insurance), and disbelief in their own ability to manage their diabetes. The healthcare providers shared their experiences of caring for diabetic patients, including their patients' non-compliance with following dietary or educational advice and taking medication, or when their patients believed that their provider was the cause of ineffective management. Most healthcare providers were hopeful about the use of remote health technology among diabetic patients, especially if patients can have access to their own health information and see graphic trends of their progress. However, they also shared some possible barriers for using the technology, especially in older or homeless populations.

Conclusions: The main concerns for healthcare providers toward their patients were that they do not have the resources or lack the motivation and education to care for their diabetes. Although their perception of the use of remote health technology was optimistic, they still shared some potential population-specific barriers for practical usage. This focus group captured valuable information from healthcare providers practicing with diabetic patients in a low-income area. This information will be able to educate further research and development of remote health technology.

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ILLNESS APPRAISAL AND POSITIVE INTERACTION IN COUPLES WITH TYPE 1 DIABETES

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For many adults with type 1 diabetes (T1D), daily management behaviors such as checking blood glucose levels, administering insulin, and making healthy diet choices occur in the context of romantic relationships. Dyadic coping theories posit that couples' coping behaviors can be affected by how couples appraise the illness. Shared illness appraisal is the perception that the illness is "our problem" rather than the individual problem of the person with T1D. We examined how average daily illness appraisals of persons with T1D and their spouses were linked to coders' ratings of partners' positive interaction (a composite of valence, positivity, and communal coping) during a discussion about T1D, and whether positive interaction was most beneficial for diabetes outcomes and psychological health when it occurred in the context of shared illness appraisals. 199 persons with T1D (Mage = 46.82) and their spouses (Mage = 46.41) completed a 14-day diary where they reported on their own illness appraisal. They then completed a series of questionnaires including measures of relationship satisfaction and life satisfaction. Persons with T1D additionally reported their diabetes distress, and self-care behaviors. Finally, they completed a measure of affect before and after an 8-min discussion about a concern related to T1D. A team of seven coders watched the video-recorded discussions and coded each partners' positive interaction based on both verbal and nonverbal behavior. Regressions revealed that greater shared appraisal of persons with T1D was associated with greater own positive interaction, but spouses' shared appraisal was not associated with their own positive interaction. Spouse positive interaction was associated with lower average daily blood glucose (BG) mean and risk for high- and low-bg levels. Furthermore, greater positive interaction in persons with T1D was related to greater emotional well-being and lower depressive symptoms when they held greater shared illness appraisals. Results suggest that appraisal and coping of persons with T1D and their partners are important to consider, and that positive interaction may be more beneficial for psychological health depending on the appraisal of the person with T1D.

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SATISFACTION WITH HEALTH CARE SERVICES FOR INDIVIDUALS WITH TYPE 1 DIABETES WHO HAVE EXPERIENCED DIABETIC KETOACIDOSIS

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Although 1 out of every 4 dollars spent by hospitals when working with Type 1 Diabetes (DM1) is used on Diabetic Ketoacidosis (DKA) admissions, little is known about the overall satisfaction of these patients with their experience in the health-care system. DKA is a life-threatening complication of DM1 with a 1-5% mortality rate. Furthermore, some research estimates 64% of cases of DM1 are initially diagnosed as a result of the occurrence of DKA. The purpose of this study is to investigate existing research on the overall health care satisfaction of individuals with DM1 who have experienced DKA. A literature review was performed using PsycNet, PubMed, MEDLINE plus, and the Nursing and Allied Health Database. A search with keywords Type 1 Diabetes, Diabetic Ketoacidosis, satisfaction, and health care resulted in 14 relevant studies. Findings across these studies were consistent, with all studies that examined the below elements of satisfaction consistently finding positive results. Given the impact of quality of care on satisfaction, 8 studies examined uniformity of care and found patterns of DKA misdiagnosis, ranging from 14.2% to 21%, and non-adherence to best care standards (e.g., recommended use of the Intensive Care Unit ranged from 2.1% to 87.7%). Patient reports of desire for increased and/or improved education on diabetes self-management, as well as DKA and its consequences were found in 7 studies (3 quantitative and 4 qualitative). Reports of stigmatizing language and related behavior by health care providers were found in 3 studies (1 quantitative and 2 qualitative). Furthermore, in 6 studies (2 quantitative and 4 qualitative) patients reported a desire for providers to address DKA related psychosocial factors during their hospital stay. In conclusion, the research suggests a need for prioritizing the use of best practice standards when treating DKA, as well as providing thorough education to the patient and taking into consideration how DKA can impact the patient psychosocially. In light of these findings, the extensive research indicating the impact of patients' perception of care and the benefits of holistic care, related enhancements to DM1 self-management after initial DKA episodes may contribute to reduced recurrence DKA episodes. Furthermore, there is a need for future research to target evaluation of interventions that incorporate such holistic care. Further discussion of implications for research and practice will be discussed.

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AUTONOMY SUPPORT AMONG PATIENTS WITH DIABETES: LINKS WITH DIABETES SELF-CARE, METABOLIC OUTCOMES, AND 5-YEAR CARDIAC RISK

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Introduction: People with diabetes who receive more autonomy support (support that emphasizes individuals' agency in their disease self-management) for diabetes management from family members and friends (supporters) have higher diabetes self-efficacy, lower diabetes distress, and better glycemic control. However, the relationship of autonomy support from family supporters with patient activation, important diabetes self-care activities, or cardiac risk factors is unknown.

Methods: This study used baseline data from 239 pairs of Veterans with type 2 diabetes at risk of diabetes complications and their supporters enrolled in a behavioral intervention trial. Patients' perceived level of autonomy support was assessed using the Important Others Climate Questionnaire-6. Outcomes included patients diabetes self-management adherence days/week (diet, exercise, medication adherence, foot care, checking blood glucose) measured using the Summary of Diabetes Self-Care Activities subscales, patient activation measured using the Patient Activation Measure, metabolic outcomes (glycated hemoglobin A1c [HbA1c], systolic blood pressure [SBP], non-HDL cholesterol [non-HDL-C] and 5-year diabetes-specific risk of a cardiac event using the UKPDS risk score. We used linear regression to examine associations between autonomy support and each outcome, controlling for insulin use and supporter-patient co-residence.

Results: Greater autonomy support was associated with better overall diet (B=0.48, 95%CI [0.20, 0.76], p=.001), more frequent exercise (B=0.29, 95%CI [0.03, 0.55], p=.027) and medication taking (B=0.23, 95%CI [0.06, 0.41], p=.008) but not with specific diet components of limiting high fat foods and eating fruits and vegetable (B=0.18, 95%CI [0.03, 0.39], p=.092), checking blood glucose (B=0.14, 95%CI [-0.08, 0.36], p=.526), or foot care (B=0.21, 95%CI [-0.05, 0.48], p=.117). Autonomy support was associated with greater patient activation (B=3.25, 95%CI [1.88, 4.61], p<.001) but not with HbA1c (B=-0.12, 95%CI [-0.31, 0.08], p=.167), SBP (B=0.13, 95%CI [-2.08, 2.33], p=.876), or non-HDL-C (B=1.15, 95%CI [-6.89, 4.60], p=.725). Higher autonomy support was significantly associated with lower 5-year cardiac risk (B = -1.21, 95%CI [-2.39, -0.03], p = .044).

Conclusion: Autonomy support for diabetes self-management is associated with important self-care activities and with greater patient activation. Autonomy support was not associated with any individual metabolic outcomes but was associated with lower 5-year cardiac risk. Our findings suggest that autonomy support from family and friends may play an important role in patients' diabetes management and should be explored in prospective analyses.

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VIRTUAL REALITY TO CHANGE RISK PERCEPTIONS AND PROMOTE ENROLLMENT IN THE DIABETES PREVENTION PROGRAM AMONGST HIGH RISK ADULTS

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Background: Prior research has demonstrated that Virtual Reality (VR) applications are an effective adjunctive therapy in the treatment of substance abuse, phobic, and post-traumatic stress disorders. However, there is very little research testing VR to motivate change in health related behaviors.

We are pilot testing two brief (3-minute) VR videos that provide vicarious experience of potential complications of Type 2 Diabetes (diabetic retinopathy and heart disease). We hypothesized that after watching the VR videos, at-risk individuals' affective and experiential risk perceptions regarding Type 2 Diabetes will increase. Secondly, we hypothesized that changes in risk perception will not be associated with the participants' numeracy or health literacy. Our long term goal is to test the efficacy of these videos (deployed via mobile phone) for increasing enrollment in the Diabetes Prevention Program (DPP).

Methods: We are identifying individuals with prediabetes at a low income clinic serving primarily Hispanic adults and recruiting them to participate via phone. Participants first provide demographic information and then complete a Risk Perception questionnaire based on the "tripartite model of risk perception", followed by viewing of the two VR videos. Two weeks later, they are sent a link to a follow-up survey to provide qualitative feedback on the VR videos, the risk perception questionnaire, a subjective numeracy scale, a health literacy assessment, and questions about whether they have enrolled in the DPP, and which contextual factors influenced their decision to enroll or not (e.g. cost, travel, etc.).

We are using thematic analysis to analyze the qualitative feedback, a paired t-test to examine within-subject changes in deliberative, affective and experiential risk perceptions, a linear model to examine associations between change in risk perceptions and individuals' subjective numeracy and health literacy, and descriptive statistics of the contextual factors related to enrollment in the DPP.

Results: To date we have identified 169 individuals with prediabetes from the clinic's records and contacted them, 78 have participated in the baseline measurement and viewed the VR videos. Data collection is ongoing, and our target is to collect and report on complete data from 100 participants.

Conclusion: We are conducting a novel pilot test of mobile Virtual Reality and testing its efficacy in changing risk perceptions and motivating enrollment in the DPP.

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A SECONDARY QUALITATIVE ANALYSIS OF PROVIDERS' USE OF LANGUAGE IN DIABETES CARE

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Diabetes stigma refers to negative feelings, such as exclusion, rejection, or blame, associated with having diabetes. A recent study of adults found three-quarters of people with type 1 diabetes and half of people with type 2 diabetes experience stigma. When people internalize diabetes stigma, they are less likely to perform self-care behaviors and form meaningful social interactions with friends and loved ones. Given the harm of stigmatization, several diabetes organizations have published position statements recommending language that is free from stigma. The purpose of this secondary qualitative analysis was to assess the frequency of stigmatizing language in a sample of 43 healthcare providers. The original aim of the qualitative study was to assess barriers to and facilitators for diabetes care in Appalachian Ohio. A purposive sample of 43 providers (mean age=45.3±12.0, 67.4% female, 95.3% white, 34.9% physicians, 21.4% nurses, 11.9% NPs, 7.1% CDEs, 7.1% pharmacists, 7.1% psychologists, 9.6% other providers, 17.3±11.6 years of experience) participated in semi-structured interviews. Interviews were transcribed, coded, and analyzed via content and thematic analyses using NVivo 12 software. This secondary qualitative analysis revealed two themes: 1) Use of Labeling Language: Thirty of the 43 (69.8%) participating providers labeled people with diabetes as “diabetics” in their interviews, with some providers using this term more than 20 times in their interviews. Further, 16 of the 43 (37.2%) providers referred to people with diabetes as “non-compliant” when discussing self-care behaviors. 2) Use of Language with Negative Connotations: Providers (n=25, 58.1%) frequently talked about A1C levels with “good” or “bad” value judgments and emphasized the goal of achieving “control” in diabetes. Other negative terms included “testing” (n=14, 32.6%) for blood glucose levels and “regimen” (n=8, 18.6%), which can imply a sense of failure and/or restriction in people with diabetes. In sum, providers frequently used stigmatizing language when talking about people with diabetes. These findings offer a real world glimpse of how providers talk about people with diabetes considering the original aim of the study was not focused on use of language. Future continuing medical education should incorporate recommended language in diabetes and integrate experiential learning to facilitate understanding and improve retention.

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ASSOCIATION BETWEEN DURATION OF TYPE 2 DIABETES AND LIFESTYLE BEHAVIORS AMONG ADULTS WITH TYPE 2 DIABETES, USING THE 2018 BRFS.

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Background: Long term management of Type 2 diabetes through physical activity (PA) and diet helps achieve glucose control and improves blood pressure, which in turn reduces the risk of complications and cardiovascular as well as all-cause mortality. A diabetes diagnosis can serve as a motivating event for the initiation of behavior changes. However, adherence to those changes can be challenging and short-lasting.

Objective: The purpose of this study is to assess levels of physical activity as well as fruit and vegetable consumption in individuals with type 2 diabetes as a function of the duration of the disease.

Methods: We conducted a cross-sectional study using data from the 2018 Behavioral Risk Factor Surveillance System (BRFSS). We included 50,267 adults with diabetes and categorized them based on their disease duration (< 5 years vs. ≥ 5 years). PA was assessed as meeting the recommended 150min/week and the number of fruits and vegetables consumed daily was reported. Logistic regression models were used to determine the association between health behaviors (PA, fruit and vegetable intake) and diabetes duration, after adjusting for demographics and comorbidities such as age, income, race, weight status, cardiovascular disease and stroke.

Results: Adults with a duration of diabetes of less than 5 years were younger (54.9 vs. 60.6), more likely to be married (54% vs. 52%), with higher income (>\$50,000 = 33% vs. 29%), and obese (56% vs. 52%) compared to adults with a duration of diabetes of at least 5 years (p<0.05). There were no significant differences by sex, race, and education. In the fully adjusted regression models, having diabetes for less than 5 years was significantly associated with meeting the recommended 150 minutes of moderate PA per week (OR = 1.269, CI = 1.136-1.418). No significant association was observed for fruit or vegetable intake.

Conclusion: Many interventions have focused on initiating behavioral changes in patients at risk for or newly diagnosed with type 2 diabetes. Our results indicate that individuals with greater duration of diabetes are less likely to meet physical activity guidelines, even when complications and comorbidities are accounted for. Future research should aim to better understand factors associated with health behaviors in those who have had diabetes for longer.

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PROTOTYPE DESIGN AND MIXED METHOD EVALUATION OF ROBOT-ASSISTED PHARMACY DIABETES CARE IN TAIWAN

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Background: Taiwan has implemented refillable prescriptions for patients with chronic illnesses for years. Patients tend to have their prescriptions refilled in nearby clinic pharmacies instead of going back to hospital. So far, there are more than 8000 pharmacies in Taiwan. Because of its high accessibility and be part of daily life, community pharmacy can further narrow the gap between large medical institutions and personal care. Chronic disease patients such diabetes patients can also be supported by medical resources in the community such as community pharmacy. Recent years, increasing study support personal health care through technology might help. However, less research has used on robots and lack the link between robots and the current medical fields. Hence, the aim of this study is to develop a health care robot prototype that can be integrated into current community pharmacists. Method This is a three phase study. Phase 1 is to design and develop the prototype diabetes care robot. At phase 2 and 3, we used mixed methods to collect quantitative and qualitative data in order to improve the current prototype. After the prototype is set up, we conducted the tests in the community pharmacies. The Participants included type 2 diabetes patients over 45 years old and community pharmacists. For diabetes patients, it is a one-group pretest-posttest design. It took 15-20 mins for diabetes patients to interact with the prototype robot. We created a self-administered questionnaires. Questions includes demographic characteristics, diabetes knowledge test, self-efficacy for diabetes and feasibility of the prototype. After interaction, we interviewed both pharmacists and patients to feedback, such as suggestions, expectations, real needs and future development of diabetes care robots. Results There were 30 diabetes patients and 10 community pharmacists participated in the study. In this research, a paired t-test was used to compare the differences before and after interacting with the robots. The analyzed data shows the significant difference between pre-test and post-test of diabetes knowledge test ($p < .001$) and feasibility of the robot ($p = .012$). Qualitative findings include five domains. (1) Health education may be the key role robot can help. (2) Robot-enhanced convenience of screening and data collection. (3) Distrust and negative feelings about the robot. (4) Robots can make patients feel more interactive. (5) Robot seemed to provide new services.

Conclusion: Both community pharmacist and diabetes patients, report the use of robots is acceptable, and it is considered feasible for robots to promote their health care in the future.

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INTERVENTION ENHANCEMENT STRATEGIES AMONG ADULTS WITH TYPE 2 DIABETES IN A VERY LOW-CARBOHYDRATE WEB-BASED PROGRAM

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Background: Adults with type 2 diabetes may experience health benefits, including glycemic control and weight loss, from following a very low-carbohydrate, ketogenic (VLC) diet. However, it is unclear which ancillary strategies may enhance these effects.

Objective: The purpose of this pilot study was to estimate the effect sizes of three intervention enhancement strategies (text messages, gifts, and breath vs. urine ketone self-monitoring) that may improve outcomes of a 12-month web-based ad libitum VLC diet and lifestyle intervention for adults with type 2 diabetes. The primary intervention also included other components to improve adherence and well-being, including positive affect and mindfulness, as well as coaching.

Methods: Overweight or obese adults ($n=44$, BMI 25-45 kg/m²) with type 2 diabetes (i.e., glycated hemoglobin (HbA1c) $\geq 6.5\%$), prescribed either no glucose-lowering medications or metformin alone, participated in a 12-month web-based VLC and lifestyle intervention. Using a 2x2x2 randomized factorial design, we compared three additional enhancement strategies: (a) near-daily text messages about the intervention's recommended behaviors (texts $n=22$ vs. no texts $n=22$), (b) mailed gifts of diet-relevant foods and cookbooks (6 rounds of mailed gifts $n=21$ vs. no gifts $n=23$), and (c) urine- or breath-based ketone self-monitoring (urine $n=21$ vs. breath $n=23$). We assessed HbA1c and weight at baseline, 4, 8, and 12 months. We evaluated whether each enhancement strategy exerted a differential impact upon HbA1c and weight at 12 months against an a priori threshold of Cohen's $d \geq 0.5$.

Results: We retained 73% of participants ($n=32$) at 12 months. The intervention, across all conditions, led to 12-month improvements in glucose control and body weight. In ITT analyses, mean HbA1c reduction was 1.0% and mean weight reduction was 5.3%, whereas among study completers these reductions were 1.2% and 6.3%, respectively, all with a $P < .001$. In ITT analyses, no enhancement strategy met the effect size threshold. Considering only study completers, two enhancement strategies showed a differential effect size of $d \geq 0.5$: text messages (vs. no text messages) for HbA1c reduction and urine ketone self-monitoring (vs. breath ketone self-monitoring) for weight reduction. Cohen's d s for gifts (vs. no gifts) were at least 0.2. Qualitative data suggested that participants generally liked the text messages and gifts, but found the breath meter difficult to use.

Conclusions: Text messages, gifts of food and cookbooks, and urine-based ketone self-monitoring may potentially enhance the glycemic or weight loss benefits of a web-based VLC diet and lifestyle intervention for individuals with type 2 diabetes. Future research could investigate other enhancement strategies to help create even more effective solutions for type 2 diabetes treatment efforts.

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MEDICATION TAKING BEHAVIOR AMONG ADULTS WITH TYPE 2 DIABETES AND POLYPHARMACY

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Background: Taking prescribed (Rx) medications, especially in the context of 'polypharmacy' (5 or more Rx medications), can be one of the most complex health behaviors. Effective organization and daily scheduling of multi-drug regimens is one of the most critical tasks for proper adherence and persistence to treatment, in order to achieve optimal management of chronic conditions, such as type 2 diabetes. Experimental medication dosing tasks using hypothetical regimens have found patients with lower health literacy are at greater risk of misunderstanding medication instructions and over-complicating dosing.

Objective: To examine actual daily dosing patterns of primary care patients with type 2 diabetes and polypharmacy.

Methods: This analysis used baseline data from a clinical trial conducted among patients with type II diabetes (N=451) recruited from two Federally Qualified Health Centers in Chicago, IL. Patients were primarily Hispanic (73%) and nearly all had limited health literacy (89%). In the interview, patients were asked to review their medication regimens and demonstrate how they typically dose out each medication daily. The total number of times medication was taken over the course of a 24 hour period was derived. As the widely endorsed Universal Medication Schedule considers dosing medication 4 or fewer times per day as acceptable, dosing over-complication was defined as taking medications 5 or more discrete times per day. Kruskal-Wallis, chi-square and fisher's exact tests were used to examine associations between sociodemographics and dosing frequency.

Results: The average regimen size of the sample was 7.6 (SD=3.59, range 2-24) daily prescription medications and patients were taking medicine on average 3.2 times daily, with a range of 1 and 9 discrete times per day. As many as 17% (N=76) of patients over-complicated regimens. Older age, lower income and lower education were associated with higher frequency of daily dosing (all p values < .05). Patients who over-complicated dosing were more likely to report poorer health status (p=.02).

Conclusions: Nearly one in five patients with Type II Diabetes contending with complex regimens reported overly-complicated dosing their medications schedules. This may go unnoticed by clinicians but increase patients risk of poor adherence, safety concerns suboptimal clinical outcomes.

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PSYCHOSOCIAL SCREENING FOR YOUTH WITH DIABETES

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Objectives: Research indicates that youth with diabetes have high rates of psychological disorders that can interfere with successful diabetes management. Clinical practice guidelines recommend routine, preventive psychosocial screening across a variety of domains. This study reports on the results of universal, comprehensive psychosocial screening in an integrated pediatric diabetes clinic.

Methods: Pediatric patients with diabetes 12 years and older were screened using brief standardized measures for depression, anxiety, diabetes stress, family conflict, and insulin regimen adherence. The screeners were completed on tablets in the waiting room before the appointment. If patients scored above a pre-determined cutoff on any measure, the psychology team conducted a consultation. Glycemic control was measured by routine hemoglobin A1c.

Results: 281 12-17 year-old youth (M age=14.9 years, 56% female, 86% with type 1 diabetes) completed the screener over a 12-month period. The following percentages of youth screened positive: depression, 23.5%; anxiety, 19.1%; diabetes stress, 21.1%; family conflict, 11.2%; and insulin non-adherence, 38.1%. Youth with poor glycemic control (A1c > 9%, 36.3%) were more likely to screen positive for depression (30.4%, p< .05), diabetes stress (36.6%, p< .001), and family conflict (21.8%, p< .001). Those with poor insulin adherence were more likely to screen positive for anxiety (26%, p< .05), diabetes stress (29.8%, p< .01), and family conflict (18.3%, p< .01).

Conclusions: Routine psychosocial screening can identify the high percentage of youth who screen positive for depression, anxiety, stress, and family conflict. These youth are more likely to have poor glycemic control and insulin regimen adherence problems.

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PREVENTING TYPE 2 DIABETES AMONG SOUTH ASIAN AMERICANS THROUGH COMMUNITY-BASED LIFESTYLE INTERVENTIONS: A SYSTEMATIC REVIEW

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The rise of type 2 diabetes in the US is a pressing public health challenge, and South Asians contribute a disproportionate amount to this diabetes burden. Culturally tailored lifestyle interventions have been explored in Europe as an effective diabetes prevention method among South Asian migrants, however their effectiveness in US settings remains unclear. This systematic review aimed to characterize and evaluate the effectiveness of community-based lifestyle interventions among South Asians living in the US. A PRISMA-informed search of Pubmed, Embase, Cochrane, Web of Science, and clinical trial registry databases using key words pertaining to South Asians migrants and diabetes indicators (glucose and insulin outcomes) was conducted of interventional or baseline studies of community-based lifestyle interventions. Screening of 1571 studies and independent full text assessment of 43 studies led to 7 studies included in the final qualitative synthesis. Most interventions focused on cultural and linguistic adaptations of past chronic disease prevention curriculums through group-class formats. Populations varied significantly by gender, educational attainment, and occupation, while almost all studies exclusively studied first-generation immigrants. Effectiveness was largely measured through HbA1C and random plasma blood glucose, with three of the five studies involving statistical analysis observing improvements in these indicators post-intervention. Contextualizing these findings with past literature, this study recommends 1) greater exploration of community-based lifestyle interventions with higher quality diabetes indicators (such as fasting blood glucose) in US-based South Asian communities, 2) expanding beyond traditional formats of group-class based lifestyle interventions and exploring the use of technology and more active intervention components, and 3) greater research on diabetes prevention among South Asians of differing migration statuses in the US (notably second generation communities).

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MEASURING DIABETES KNOWLEDGE IN HISPANICS WITH TYPE 2 DIABETES

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Purpose: Hispanic Americans suffer disproportionately from diabetes and health complications. Assessing diabetes knowledge is a critical step to identify educational gaps for diabetes self-management interventions. The purpose of this study was to examine reliability and validity of the Spoken Knowledge in Low Literacy in Diabetes Scale (SKILLD) in measuring diabetes knowledge among Hispanics with type 2 diabetes.

Methods: A total of 111 Hispanic participants with type 2 diabetes (T2DM) comprised the study. Participants were recruited in the clinics and churches in the Southeastern U.S. The Spanish version of the SKILLD measures diabetes knowledge. The Summary of Diabetes Self-Care Activities (SDSCA) measure was used to test convergent validity. Reliability via internal consistency was estimated using Kuder-Richardson 20 (KR-20). Item analysis and exploratory factor analysis (EFA) was conducted on the ten dichotomous items comprising the Spanish SKILLD instrument. Item analysis consisted of estimating the percentages of participants getting each item correct, the corrected point-biserial correlations (item-to-total), and KR-20 with each item removed. Since items were dichotomous, EFA was performed after estimating tetrachoric correlations among the items in Mplus v7.3. Spearman rank correlations of SKILLD scores with Diabetes Self-Care Activities (SDSCA) scores were inspected for evidence of convergent validity as well as with HbA1c level and duration of diabetes.

Results: The average SKILLD score was 35.1% ($SD = 23.4\%$). The percent correct response for each of the 10 SKILLD items ranged from 4.5% to 56.8%. The estimated reliability via internal consistency was adequate ($KR-20 = 0.706$). EFA of the ten SKILLD items modestly indicated one factor could be retained. Spearman rank correlations of SKILLD scores with diabetes self-care activities were significant and positive for feet ($r_s = 0.26, p = 0.014$). SKILLD scores were significantly correlated with duration of diabetes (years) ($r_s = 0.27, p = 0.004$). Those using insulin ($n = 26$ (23%): $45.4\% \pm 23.4$ vs. not using ($n = 85$ (77%)): $32.0\% \pm 22.6, p = 0.015$) and that had a higher level of education (High school to some college ($n = 30$ (27%)): $45.3\% \pm 20.6$ vs. Less than 12 years ($n = 81$ (73%)): $31.4\% \pm 23.3, p = 0.005$) had significantly higher SKILLD scores.

Conclusions: The Spanish SKILLD showed acceptable reliability and adequate validity in the sample of Hispanics with type 2 diabetes. The SKILLD scores in this study have shown low knowledge to diabetes in this sample. Clearly, diabetes education tailored to low literacy needs to be delivered to Hispanics in the communities. The specific lack of knowledge of hypo/hyperglycemia exposes participants to severe short and long term consequences of diabetes complications. Priority intervention must include more effective education for hypoglycemic symptom recognition and treatment.

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SCHOOL SALAD BARS AND LUNCH ENERGY INTAKE: A PLATE WASTE ANALYSIS AMONG TITLE I ELEMENTARY SCHOOLS WITH UNIVERSAL FREE MEALS

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Background: School salad bars are promoted to prevent/reduce childhood obesity by increasing fruit and vegetable (F&V) intake. It is assumed that with greater F&V intake, reduced energy intake occurs. To better understand the effect of school salad bars on lunch energy intake, this study examined lunch energy intake, both total and by meal components, in schools with salad bars (SB) compared to schools serving pre-portioned F&Vs (Control).

Methods: Three pairs of Title I elementary schools (A, B, C) with and without salad bars in central Virginia were matched on % racial/ethnic minority students and the cafeteria environment and randomly selected. The primary difference between schools was how Vs were served (salad bar or pre-portioned). Students in grades 1-5 were eligible (92.5% NSLP participation; 98.6% minority; 100% free meals). To determine lunch intake, digital images were taken before and after consumption. Trained raters (intrate reliability > 0.80) documented selection (to the nearest $\frac{1}{4}$ c for self-serve) and intake in 20% increments, with beverages rated to the nearest $\frac{1}{2}$ oz. Reference portions were used for nutrition analyses. Energy intake was calculated for total meal, Fs, Vs, entrées, snacks, and beverages. As multilevel models found a significant group*pair interaction, multilevel models examined group differences (SB vs Control) by pair (A, B, C) in outcomes accounting for sex, grade, and nesting within schools and stratified by pair.

Results: Overall, 1155 trays were rated ($n=532$ SB; $n=623$ Control). Mean total lunch energy intake ranged from 249.6 ± 132.3 kcal to 434.6 ± 161.0 kcal for SB, and 260.0 ± 153.4 kcal to 391.9 ± 190.8 kcal for Control. Pairs A and C's lunch energy intake was significantly ($p < 0.05$) greater for SB vs Control, whereas differences were not found for Pair B. Pairs A and C also reported significantly ($p < 0.05$) greater entrée energy intake in SB vs Control, whereas Pair B reported significantly ($p=0.007$) less entrée energy intake in SB vs Control. Pairs B and C had significantly ($p < 0.0001$) greater V energy intake in SB vs Control.

Conclusion: Mean energy intake from all lunches was < 450 kcal, indicating school lunch was not providing excessive energy. Schools with salad bars did not have lower lunch energy intake. Differences across pairs in energy intake, both in total and by meal components, varied in all comparisons, indicating that intake may be influenced by foods served or school-level factors not assessed.

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HELPING PARENTS PROVIDE VEGETABLE SNACKS: IDENTIFYING AN IMPACTFUL STORE DISCOUNT MAGNITUDE AND FACTORS THAT INFLUENCE APPEAL

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Purpose: Snacks contribute nearly one quarter of children's daily energy intake. Snacktime therefore represents an opportunity for parents to provide foods with key nutrients. Instead, the most common snack foods are major contributors to children's consumption of added sugars, saturated fat, and sodium. Parents face major barriers to providing healthier snacks, including perceptions of high cost and lack of child acceptance. Previous research suggests that grocery store discounts may shift purchases towards healthier snack foods such as vegetables, however additional research is needed to identify what magnitude of discount is impactful for parent shoppers. Research is also needed to understand how to increase child acceptance of vegetable snacks. The purpose of this study was to obtain economic and qualitative data to optimize interventions for parents to promote vegetable snacks for children.

Methods: We partnered with community organizations serving families in Massachusetts and New York to conduct an online survey with parents (n=516) to estimate whether and how much of a discount would influence vegetable snack purchases by estimating willingness-to-pay using the contingent valuation method, using baby carrots as a sample product. We conducted four focus group discussions with children in Massachusetts (n=21) designed to help understand how to increase the appeal of vegetable snacks.

Results: Parent survey respondents had an average of 1.7 children (SD 1.1) with a mean age of 8.5 years (SD 2.6). Sixty-four percent of parent respondents were white and 42% were eligible for free-or-reduced-price school meals. Most (70%) accepted the current market price for baby carrots. Among parents who did not accept the market price, contingent valuation analysis revealed that a discount amount of approximately 30% would shift purchasing behavior. Focus group results revealed that the appeal of vegetable snacks to children was influenced by preparation, presentation, autonomy, and familiarity.

Conclusion: This study lays the groundwork for effective interventions to promote the provision of vegetable snacks by parents. Such interventions could include multiple strategies to address barriers to child vegetable consumption, such as partnerships with stores to provide discounts on vegetables and educational materials for parents with strategies to increase the appeal of vegetable snacks.

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PARENTAL OVERPOUR: EXPLORING SERVING SIZE ESTIMATION FACTORS AMONG PARENTS

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Serving size guidance on food and beverage labels is one attempt by policymakers to increase consumer understanding of the amount recommended to consume in a single sitting. Serving size estimation is related to several factors such as hunger levels, health numeracy, and the metric of measurement (Brogden & Almiron-Roig, 2011; Regan et al., 2018). Further research is needed to identify how additional factors, such as food type and public policy tools, are associated with one's perception of serving sizes. This study used products with Front of Package (FOP) labels (a 1-4 star healthfulness rating) to test how an informative public service announcement (PSA) introducing and explaining the star-based labels would impact serving size estimations and how serving size estimations differ by food type. 175 parent-child dyads were randomly assigned to either see a PSA for an FOP label (n = 59) or not (n = 113), before completing a mock grocery store task and several post-shopping tasks including a serving size estimation task. Serving size estimation data from 172 parents (93% female, M age = 38.4, 87% white, 14% Hispanic) for 4 foods – 2 cereals (a dense, crunchy wheat and barley cereal, and a rice cereal) and 2 snack foods (potato chips, and pretzels) were analyzed. It was predicted that those who viewed the PSA for the FOP labels would estimate smaller portions of less healthful foods (i.e., chips, pretzels), relative to foods earning more stars (i.e., the cereals). Linear regressions showed that seeing the PSA predicted neither total serving size estimations ($R^2 < .001$, $F(1, 686) = 0.174$, $p > .05$) nor serving size estimations for individual foods (All $R^2 < .01$, $F_s(1, 170)$ ranged from 0.245 – 1.66, $p_s > .05$). However, regression analyses indicated that food type was a significant predictor of serving size estimation, predicting around 91% of the variance ($R^2 = .910$, $F(3, 684) = 2294$, $p < .001$). Holding other estimations constant, it was shown that – consistent with predictions – parents overestimated serving sizes for the dense wheat and barley cereal ($M = 5.8\%$ overestimation) and for pretzels ($M = 12.8\%$ overestimation), but they underestimated the serving size of the rice cereal ($M = 26\%$ underestimation) and potato chips ($M = 9.1\%$ underestimation). Findings suggest that while watching a PSA about labeling may not have a significant impact on serving size estimations of foods with the advertised labels, the type of food is associated with the degree to which an individual may over/underestimate serving sizes. Overestimation of serving sizes and increased portion sizes may be implicated in over-consumption of certain food types. By identifying factors related to errors in serving size estimation, researchers can highlight areas of potential bias useful in providing feedback to those hoping to improve the accuracy of their estimations.

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RELATIONSHIP BETWEEN ADDED SUGAR CONSUMPTION AND MENTAL HEALTH AMONG MIDWESTERN COLLEGE STUDENTS

Jerome Kotecki, n/a¹, Maurita A. Greene, n/a¹, Tya Arthur, n/a², Jagdish Khubchandani, n/a², Jay Kandiah, n/a¹¹Ball State University, Muncie, IN; ²Ball State University, Muncie, IN**Objective:** The aim of this study was to examine the relationship between added sugar consumption and mental health in college students.**Methods:** A 45-item electronic survey was sent to a cross-sectional sample of undergraduate students at a Midwestern University after being tested for face, content, and construct validity. Added sugar consumption was assessed using 3 items measuring sweets, soft drinks, and specialty drinks containing sugar by employing a 5-point Likert scale ranging from 'never' to 'always'. Mental health was assessed in three ways. First, with the Kesslers-6 (K6) scale to measure psychological distress over the past month. The K6 employs a 5-point Likert scale ranging from 'none of the time' to 'all the time' for its 6 items. Second, with the Perceived Stress Scale (PSS-10) to measure perceived and chronic stress. The PSS-10 employs a 5-point Likert scale ranging from 'never' to 'very often'. Third, with the CDC's Healthy Day Measure of how many days during the past 30 days was one's mental health not good.**Results:** A total of 1,170 students completed the survey (response rate=92.3%). The majority were Whites (82.3%), female (67.5%) and 18-20 years old (79.1%). The mean added sugar score was 9.64 ± 2.38 . The three mean mental health measures were: K-6 11.05 ± 5.07 , PSS-10 20.42 ± 6.40 , and number of days mental health not good 9.38 ± 8.22 . Statistically significant relationships ($p < 0.05$) existed between K6 (-.21), PSS-10 (-.21), and Healthy Mental Days Measure (-.16), and added sugar consumption. Since higher scores on the stress and healthy mental days scales are negative while higher scores on the added sugar are positive for health, the negative correlations indicate increased sugar intake is paired with increase stress and more unhealthy days. Furthermore, differences were found between gender ($t(728.96) = 3.14, p = .002$) but not race ($F(2,1167) = 0.69, p = .50$) for the added sugar consumption score.**Conclusions:** The downfalls of high added sugar consumption are not limited to weight gain, obesity, Type 2 diabetes, cardiovascular disease, and many cancers. Consuming too much sugar may also increase young adults' risk of mental health disorders. While college counselors and health professionals address stress and mental health issues in students, consideration should be given to addressing added sugar consumption behaviors that may be associated with mental health.

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ASSOCIATION BETWEEN APPEARANCE-BASED DISCRIMINATION AND BINGE EATING DISORDER AMONG SEXUAL MINORITY MEN

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Numerous studies have tied weight-based discrimination to binge eating and binge eating disorder (BED) in various samples. One group that encounters frequent discrimination is sexual minority men (SMM). Minority stress theory posits that minority groups, like SMM, face excess stressors due to their stigmatized position in society. Given this elevated stress, SMM may be at increased risk of developing BED; however, this association is currently underexplored. Thus, the current study examined the association of various forms of discrimination, inclusive of appearance-based discrimination (which may be salient for SMM due to their endorsement of the mesomorphic ideal), and probable BED diagnosis in a sample of SMM. A sample of 189 SMM from the greater Boston area were recruited in order to pilot an at-home rapid HIV detection test. After recruitment, participants completed self-report questionnaires assessing frequency of different forms of perceived discrimination (appearance, race, sexual orientation, income, etc.) and probable BED diagnosis via the PHQ-ED. A hierarchical binary logistic regression model with three steps was used to examine the association of different forms of discrimination and probable BED diagnosis. These steps were 1.) physical appearance discrimination predicting probable BED diagnosis as the binary outcome variable, 2.) adding the remaining forms of discrimination as predictors, and 3.) including additional socio-demographic covariates. 4.2% of the sample screened positive for probable BED. Appearance-based discrimination was the most common form of discrimination reported (47.2%), followed closely by income (45.1%) and sexual orientation (44.0%). Appearance-based discrimination was significantly associated with probable BED diagnosis over and above all other forms of discrimination and sociodemographic variables, OR = 2.82, 95% CI = [1.52, 5.25], $p = .001$. Of note, appearance-based discrimination was the only form of discrimination that significantly predicted probable BED diagnosis. Findings suggest that appearance-based discrimination may be related to BED in SMM. Future research should examine these associations longitudinally in order to establish temporal ordering. Due to the reported frequencies of discrimination, clinicians may consider assessing appearance-based discrimination among SMM patients so as not to assume that sexual orientation discrimination is the most predictive form of discrimination for BED.

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GARDENING FOR HEALTH: DEVELOPING A SCHOOL GARDEN AND HEALTHY EATING CURRICULUM FOR NAVAJO ELEMENTARY SCHOOLS

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Background: Navajo youth are at increased risk for obesity, diabetes and cancer, in part due to low fruit and vegetable consumption. Barriers to healthy eating include limited access to fresh fruits and vegetables and lack of knowledge regarding nutrition guidelines.

Methods: In collaboration with community partners, we developed a program to increase fruit and vegetable consumption among Navajo (Diné) youth. The program includes elementary school-based gardens and a gardening and healthy eating curriculum for 3rd and 4th grade students. We built on existing school-based garden programs and modified lessons to include aspects of Navajo culture, such as traditional growing practices and foods. Formative work included focus groups with Navajo parents and children and a pilot demonstration program that assessed feasibility of delivering the garden and curriculum. We conducted interview assessment of parents and children's satisfaction with the program. We used the pilot results to further adapt the curriculum. The modified program is being tested in a randomized control trial in six elementary schools in two communities on the Navajo Nation.

Results: Themes from the parent focus groups included: strong value in having a school-based garden, desire to expose their child to new fruits and vegetables, interest in activities incorporating Navajo culture and opportunities to learn about gardening and cooking. Themes from the student focus group included: wanting to learn more about gardening and interest in eating foods they grow themselves. Our original curriculum consisted of 12 healthy eating lessons and 12 gardening lessons implemented throughout the academic school year for 1st – 5th grade students. Pilot testing identified lessons that were too complicated and helped reorder the lessons for improve flow and synergy between lessons. The revised healthy eating and gardening curriculum consists of 10 lessons each, targets 3rd and 4th grade students, and meets state and tribal teaching standards. Lessons include: reading a recipe, eating for energy, eating a variety of fruits and vegetables, native plants and Navajo ecology and garden maintenance.

Conclusions and Future Recommendations: Formative research and pilot testing can inform the development of culturally relevant health promotion interventions. Results from our study can guide future research on healthy eating and gardening in elementary schools on the Navajo Nation.

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PLACE BASED TEXT MESSAGES AS AN APPROACH TO IMPROVE FRUITS AND VEGETABLE AMONG RURAL FOOD INSECURE ADULTS

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Research to date has shown that rural communities face greater barriers to healthy eating and being physically active, which contributes to higher rates of obesity and chronic disease compared with their urban counterparts. **Utilization of technology may be an effective approach to help improve health outcomes among these unique communities.** Currently, 71% of rural residents own a smart phone, and 92% of ages 30-49 and 79% of ages 50-64 own a smart phone as well. Thus, this intervention will utilize smart phones as a way to provide healthy nudges during the day. The randomized control trial intervention (n=520) will utilize a Cooperative Extension developed app (Fit Blue KY) that allows for in the moment text messages (place – based messages) to be sent to rural residents (n=8 counties) when they are at various food venues (grocery stores, supercenters, dollar stores) and at home to assist with making healthier food and beverage choices. Based on preliminary data residents are more likely to respond (reply to the text message) to helpful behavior based text message nudges that are affective in nature rather than educational. In addition, residents are receptive to text message nudges that are tailored to the location they are in rather than a general message about shopping behaviors. Implications of these preliminary results assist with development of text messages for the large scale intervention and help to guide dissemination across a variety of health settings.

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MOTHERS' DASH DIET ADHERENCE AND WEEKLY FOOD PURCHASES AFTER BRIEF EPISODIC FUTURE THINKING INTERVENTION

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Background: Prospection has been shown to help mothers forego the temptation to buy and eat higher calorie nutrient poor foods in favor of buying and eating fewer calories and healthier macronutrient profiles in laboratory tasks and in brief field studies. The present study extends those findings to examine whether EFT improves dietary behavior or grocery purchasing from baseline to follow-up over a longer period of time.

Methods: The present study was a one-week EFT intervention on mothers' dietary behaviors and food purchases delivered through a mobile ecological momentary intervention (EMI) tool. We used a mixed methods design, whereby participants were randomized to one of four groups: EFT or standardized episodic thinking (SET) with dietary approaches to stop hypertension (DASH) diet education or food safety education. Participants listened to their cues using their preferred device and returned one week later to complete a follow-up dietary recall and submit food receipts. Mixed linear models were used with EFT and education as dummy coded independent variables and baseline and follow-up DASH diet adherence scores and nutrients purchased as repeated measures dependent variables in separate models.

Results: There was an EFT effect on DASH diet adherence scores, such that mothers in the EFT groups increased their DASH adherence scores over the one-week intervention ($p < .05$). There was an EFT effect on milligrams of sodium purchased ($p < .05$) and a trend towards a decrease in grams of fat purchased ($p = .06$), however, there was no significant effect of EFT on calories or other macronutrients purchased ($> .05$).

Discussion: EFT had a small positive effect on participant's dietary behaviors, and may have led to a decrease in sodium purchased, but did not change the calorie content or overall quality of grocery purchases. It is possible that intervening with mothers alone wasn't enough to make food purchase changes for the entire household over a longer period of time. Previous research has found that EFT has large acute effects on behavior and decision-making, but future studies should seek to identify if there is long term efficacy of EFT interventions.

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PEDIATRIC FOOD CHOICES: THE RELATIVE IMPORTANCE OF TASTE, HEALTH, AND WHAT YOUR MOTHER DOES

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In the U.S., 19% of youth aged 2-19 are obese (CDC, 2017). Thus, prevention and intervention programs are essential. Better understanding of factors impacting food choice can inform programs. Parents play a key role in children's food choices and food-related attitudes (Wrotniak et al., 2005). A neuroimaging study reported that maternal food choices play a regulatory role in children's food choices (Lim et al., 2016). The synchrony of food choices in mother-child dyads has not been explicitly examined. The present study examined the relationship between the importance of taste and health on food attitudes and choices in mother-child dyads. In addition, given that advertising impacts children's food choices (Bruce et al., 2016; Fakhouri, et al., 2013), this study examined the relationship between maternally perceived advertising influence on children and children's food attitudes. Thirty-nine children aged 8-12 years ($M = 10.40$, $SD = 1.41$; BMI percentiles $M = 63.81$, $SD = 31.55$) and mothers ($M_{age} = 39.75$, $SD = 6.38$; BMI $M = 28.97$, $SD = 6.78$) were recruited from the Kansas City area. Mothers and children completed computerized food rating and choice tasks asking them to rate 30 healthy and 30 unhealthy foods on health, taste, liking, and choice (Ha et al., 2018). They also reported on demographics, attitudes on food choice, and eating behavior. Preliminary results indicated a significant negative relationship between maternal health importance on food choices and the importance of taste on child's food liking ($r = -.36$, $p = .03$), and a negative relationship between maternal health importance on food liking and her child's own liking based on taste ($r = -.33$, $p = .04$). As a mother placed less importance of health on food choices, the child placed more importance of taste on food liking. Results also indicated that a mother's perspective on the advertising's impact on her child was positively related to the importance of taste on child's food liking ($r = .43$, $p = .01$). When a mother reported commercial advertising having a high influence on her child, the child placed more importance on taste on liking of food. This study is ongoing, and more data will be collected. With high utilization of family-based treatment for obesity, it is helpful to understand how parents use health and taste in food choice and the relationship to those factors in their child. This knowledge could guide future childhood obesity prevention and intervention programs.

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INTERACTIONS AMONG REWARD SENSITIVITY AND FAST FOOD ACCESS ON HEALTHY EATING IN ADOLESCENTS

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Food cues in the environment may contribute to obesity as the consumption of foods high in sugar and fat may reinforce reward pathways in the brain. This response may vary due to person-level differences such as motivation. To understand how individual factors lead to the consumption of low-quality foods, this study aimed to examine the moderating role of availability of fast-food outlets in the environment on the relationship between approach motivation and healthy eating in children.

Children (N=152; 55% female; m_{age} : 12.5 \pm 0.93 y) completed a questionnaire assessing approach motivation using the drive and reward responsiveness subscales of the Behavioral Activation System (BAS) scale. Two 24-hour dietary recalls were conducted, and Healthy Eating Index (HEI) scores were calculated from the dietary data. Fast food environment (FFE) was operationalized as the total number of fast-food outlets within 1km around participants' home address in 2017, derived using GIS as a measure of average exposure to unhealthy food cues. SPSS PROCESS was used to examine statistical interactions between approach motivation and FFE in relation to HEI scale. Covariates included participants' sex, age, BMI, ethnicity, and family income level.

Bivariate correlations and multiple regression analysis did not find main effects of BAS on HEI total score. Interactions between FFE and BAS drive ($p=.102$) and BAS reward ($p=.056$) were marginally significant on HEI, thus, HEI subscales for adequacy (dietary components to increase i.e. fruits and vegetables) and moderation (components to decrease i.e. sodium and saturated fat) were further examined. Interactions were found between FFE and BAS drive ($p=.021$) and BAS reward ($p=.005$) on HEI adequacy. For individuals who had lower access to fast food outlets, there was a stronger positive association between higher BAS drive and reward scores and HEI adequacy scores. There was no interaction between BAS drive or reward with FFE in predicting HEI moderation scores ($p=.931$ and $.925$).

The association between approach motivation and healthy diet varied depending on children's FFE such that high FFEs weakened the association between reward sensitivity and adequacy (higher diet quality). By examining reward sensitivity to potential food cues in residential neighborhood food environments, it is possible to understand which children are more sensitive to environmental food cues and implement policies to buffer these influences.

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IMPROVEMENTS IN REWARD BASED EATING THROUGH GENERAL MINDFULNESS INTERVENTION EXPLAINED BY IMPROVEMENTS IN TRAIT MINDFULNESS

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Reward-based eating drive, characterized by lack of control over eating, lack of satiation, and preoccupation with food, is an important yet overlooked behavioral phenotype among individuals with overweight and likely explains why many fail to see long-term results in standard behavioral weight loss programs. It is unclear whether general mindfulness programs can directly target reward-based eating drive, although it is plausible that increased overall mindfulness could promote greater self-regulatory control with regards to food. Therefore, we performed secondary analyses from an RCT evaluating the effects of a digital meditation program on work stress. We specifically examined outcomes related to reward-driven eating, as well as the moderating effect of weight status and potential mediating factors, such as mindfulness and perceived stress. We randomized 1056 employees at a large public university, reporting moderate-to-high levels of stress and no regular meditation practice, to either a self-guided, digital meditation intervention (IX) or a waitlist control condition (WL). We assessed reward-based eating drive with the Reward-based Eating Drive (RED-9) scale, subjective mindfulness with the Mindfulness Attention Awareness Scale (MAAS), and perceived stress with the Perceived Stress Scale (PSS), at baseline and 4- and 8-weeks post-randomization. We used linear mixed modeling to examine the effect of treatment randomization on changes in RED-9 and SPSS PROCESS Macro to examine the potential mediating roles of MAAS and PSS. We found a significant main effect of treatment randomization on 8-week changes in RED-9, such that those in IX (vs. WL) evidenced greater decreases in RED-9 ($t = 4.21$, $p < .001$, 95% CI: -2.06, -0.75). We found a moderating effect of weight status, such that participants with (vs. without) overweight exhibited the greatest decreases in RED-9 in response to treatment (-3.48 vs. -1.88, $p = .01$). Improvements in 4-week MAAS scores mediated this association (indirect effect: $B = 0.51$, 95% CI: 0.31, 0.76), explaining 20% of the total effect. Decreases in PSS did not account for the effect of intervention on changes in RED-9 (indirect effect: $B = 0.17$, 95% CI: -0.11, 0.47). In a generally healthy sample of non-weight loss treatment seeking adults, we found preliminary support for a light-touch, general mindfulness program in improving reward-related eating symptoms, particularly among those with overweight. Furthermore, our analyses point to mechanisms of improvements in mindfulness, rather than perceived stress, as important opportunities for intervention refinement. Future research should be done to examine the relative contribution of meditation dosage, as well as changes in actual eating behaviors and weight over the 8-week period.

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ROADMAP TO PARENTHOOD: DEVELOPMENT OF AN ONLINE DECISION AID AND PLANNING TOOL FOR FAMILY-BUILDING AFTER CANCER

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Background: Young adult (YA) cancer survivors who receive gonadotoxic treatment often face complex decisions about family-building with limited reproductive care post-treatment. Based on extensive pilot work and a patient-centered design approach, we developed a prototype of a web-based decision aid and planning tool, "Roadmap to Parenthood." Design sprints were used to develop and optimize prototype iterations. This study presents usability testing results and the impact of patient-centered design processes on website development.

Methods: Participants (N=10) represented the target user group; YA female survivors who completed gonadotoxic treatment and desired future children. Each completed one "think aloud" usability testing session. After 6 sessions (Round 1), initial website revisions were made; followed by 4 more sessions with the updated website (Round 2). The standardized System Usability Scale (SUS), Website Quality measure (WEBQUAL), and e-Health Impact Questionnaire (eHIQ) assessed website usability, quality, and health impact. Qualitative analyses of "think aloud" testing included transcript coding and thematic analysis. Scores on quantitative measures were compared from Round 1 to Round 2 to assess website updates and inform iterative design modifications.

Results: Participants averaged 31 years old and were mostly White (90%). Three major themes for website improvement were identified: Usability, Visibility and Navigation, and Content and Usefulness. Examples include changes to the layout to improve functionality and ease-of-use, "call out" buttons to guide the user journey, and design changes to optimize health literacy (e.g., simplified data presentation). Following revisions, Round 2 testing confirmed usability improvement, resulting in user comments that focused on more nuanced aspects of design and content. For example, specific words and images were identified as anxiety-provoking. Changes were made addressing users' emotional experience (e.g., word and color choice). Scores on all quantitative measures improved from Round 1 to 2, demonstrating improved usability and website quality, and a positive impact on health management.

Conclusions: Patient-centered healthcare, including the development of supportive care resources, must involve input from the target patient group. Usability testing revealed key areas of design modification to address patient user needs. Website changes are currently underway based on final usability testing results. Further testing with a more diverse patient group may be warranted. Future research will pilot test the decision aid in a single-arm study.

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DOES MINDFULNESS MITIGATE RISK FACTORS FOR SMARTPHONE ADDICTION?

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Background: There is growing public health concern regarding the potential addictive nature of smartphones. Mindfulness is defined as a disposition towards open, receptive awareness of and attention to what is taking place in the present moment. Mindfulness may protect against problematic smartphone use by reducing one's tendencies towards automatic and compulsive behaviors.

Purpose: We sought to test the hypothesis that trait mindfulness can mitigate the impact of risk factors on smartphone addiction in a sample of college students from a large state university in Texas.

Methods: Participants ($n = 135$, $M_{age} = 19.15$, 68% female) completed cross-sectional survey measures documenting their self-reported boredom proneness (BPS), impulsivity (short UPPS-P), technology-related anxiety (Anxiety/Dependence subscale of the MTUAS), trait mindfulness (MAAS), and smartphone addiction (SPA). This study was part of a larger study examining dysfunction associated with smartphone use.

Results: Age and gender were included as covariates. A MANCOVA indicated higher MAAS scores were significantly associated with lower levels of boredom proneness, technology-related anxiety, and smartphone addiction scores ($F(4,128) = 14.30$, $p < .01$). Next, risk factor scores, MAAS scores, and their interactions were entered into a linear regression predicting SPAI scores. Main effects were revealed for boredom proneness ($\beta = .46$, $t = 2.02$, $p < .05$) and impulsivity ($\beta = .20$, $t = 2.56$, $p < .05$), although their interactions were non-significant. However, the interaction between technology-related anxiety and MAAS scores was significant. Simple slope analyses revealed that the relationship was significant and positive for low ($\beta = 3.69$, $t = 7.70$, $p < .01$) and average ($\beta = 2.17$, $t = 2.18$, $p < .01$) MAAS scorers, but non-significant for high MAAS scorers.

Conclusions: The effect of technology-related anxiety on problematic smartphone use is conditional, and appears to diminish as one's mindfulness increases. Mindfulness may protect against risk for smartphone addiction by reducing anxiety and dependence concerns, or vice-versa. Future research should examine if problematic smartphone users benefit from mindfulness-based interventions targeting their worry and overreliance on technology.

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TRACIT: THE USE OF A MODIFIED DIETARY MONITORING APP IN A HEALTHY WEIGHT INTERVENTION FOR YOUNG ADULTS

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Young adulthood (i.e., ages 18 to 35) is associated with the most substantial amount of weight gain in a lifetime, putting young adults at risk for additional health complications. Dietary monitoring is a core component of behavioural weight loss interventions and has been shown to be the number one indicator of sustained weight loss in an adult population. However, findings are mixed for dietary monitoring in young adults, which may be due to the fact that traditional dietary monitoring tools are labour intensive and can result in considerable burden. The TRACIT app was developed based on Mozzafarrin and colleagues' (2011) landmark study, which showed that a small number of foods (15) could predict weight change over time. TRACIT only records these 15 specific foods and therefore has significant potential to decrease burden and improve accessibility, which may be useful in a young adult population. The present study is a two-armed randomized behavioural intervention that compared the efficacy of using TRACIT ($n = 17$) compared to MyFitnessPal ($n = 16$) over a 10-week evidence-based weight-management intervention in a young adult population. Participants were overweight undergraduate students ($M_{\text{age}} = 20.16[\pm 2.27]$, $M_{\text{BMI}} = 26.46 [\pm 5.40]$), primarily consisting of females (78.80%). Weight significantly decreased within groups over the intervention, $F(1, 29) = 6.66$, $p = .02$, $h^2 = .19$, but not between groups, $F(1, 29) = 0.71$, $p = .41$, $h^2 = .02$. Both TRACIT ($M = -1.29$ lbs, $SD = 2.40$) and MyFitnessPal ($M = -2.11$ lbs, $SD = 4.32$) users had similar amount of weight loss over time. Similarly, step counts increased significantly over time within groups but not between groups. There was a significant association between the type of app used and using the app everyday to track dietary intake, $\chi^2(1) = 4.50$, $p = .03$. That is, TRACIT users were 4.84 times more likely to use their app every day to monitor their diet, which may have implications for sustained adherence to dietary monitoring over time. Importantly, TRACIT improved the quality of users' diet compared to MyFitnessPal, which may be related to secondary physiological changes (e.g., decreases in systolic blood pressure for TRACIT users). Although TRACIT users found the app less time consuming, MyFitnessPal users were more likely to recommend their app to a friend looking to manage their weight. TRACIT has the potential to be a complementary adjunctive to behavioural interventions in a young adult population that reduces burden and is less time-consuming.

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INTERVENTION INC: BEHAVIORAL AND BMI OUTCOMES OF A WEB-BASED TOOL TO DECREASE OBESITY RISK AMONG URBAN MINORITY YOUTH

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Background: Childhood obesity is a serious public health issue in the United States, especially among low-income, minority populations. Web-based/mHealth interventions may be an engaging approach to reach at-risk children and promote positive dietary behaviors. Intervention INC is a technology-enhanced intervention, which comprises a 6-chapter interactive nutrition comic (and related trivia questions, goal-setting, and tailored messaging), with the goal of reducing childhood obesity risk in Black/African-American (AA) and Latino preadolescents. This theory-informed, tablet-optimized intervention was iteratively developed utilizing user-centered approaches. The purpose of this study was to explore potential impact of Intervention INC on child dietary-related behaviors and anthropometric measures.

Methods: A total of 89 Black/AA and Latino children (mean age=10.4±1.0 years, 61% female, 62% Black, 42% Latino, 51% overweight or obese, and 33% annual household income < \$20,000) from East Harlem/Harlem, New York participated in a pilot two-group randomized study, comprising a 6-week intervention and a 3-month follow-up. Participants were randomly assigned to either the experimental (E) ($n=45$) group, who received Intervention INC, or the comparison (C) ($n=44$) group, who received online nutrition newsletters. Surveys measuring behaviors related to fruit, vegetable, water, sugar, and junk food intake were completed at baseline (T1), intervention mid-point (T2), intervention end (T3) and 3-month follow-up (T4). Height and weight were measured at T1 and T4 to calculate body mass index (BMI) percentiles. Data were analyzed using mixed models with repeated assessments (T1-T4), condition (E-C), and time by condition interaction.

Results: While the interactions were not statistically significant, the E group appeared to have improvements from T1 to T3 in fruit ($d=0.14$ vs. $d=-0.20$), vegetable ($d=0.43$ vs. $d=0.04$), water ($d=0.37$ vs. $d=0.15$), and sugar ($d=-0.34$ vs. $d=0.00$) intake compared to the C group. Most improvements appeared to diminish at T4. BMI percentile decreased in males within the E group ($d=0.53$ vs. $d=-0.05$) from T1 to T4.

Conclusions: Study results appear promising, however, the diminished effects in dietary behaviors observed at T4 should be noted. While an interactive nutrition comic may be a useful format to promote healthy dietary behaviors in minority children at risk for childhood obesity, a booster component should be considered to reinforce health messages upon completion of the actual intervention. Further research is also warranted to determine the efficacy of this innovative web-based health promotion tool.

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ACCEPTME: EVALUATION OF A DIGITAL GAMIFIED EATING DISORDER PREVENTION PROGRAM BASED ON ACCEPTANCE AND COMMITMENT THERAPY

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Eating Disorders (ED) constitute a serious public health issue that affects predominantly women and appears typically in adolescence or early adulthood. As EDs are associated with significant adverse medical and psychological consequences, it is vital to focus on the development of successful prevention programs. Prevention programs to date have not shown great effectiveness and thus new approaches (both theoretically and technologically innovative) are needed so as to reach individuals early in the ED trajectory. This paper presents the development of a gamified prevention program (*AcceptME*) based on Acceptance and Commitment. The study used a randomized clinical trial design and investigated acceptability and effectiveness compared to a wait-list control group among high-risk for EDs young women (N= 88; Mage = 15 years). The prevention group (N= 58) completed 6 internet-based sessions targeting behavior change via helping (using ACT taught principles) a digital character in the game to overcome difficulties. Findings showed that the *AcceptME* program was perceived as helpful for dealing with body related thoughts and worries and participants particularly liked and found helpful the values and acceptance components of the program. The game storyline was reported to be engaging and aid in learning from the game experience. Repeated measures analyses of variance indicated that the *AcceptME* prevention program effectively reduced weight and shape concerns, with large resulting effect sizes (*Cohen's d*= .91) compared to wait-list controls. The gamified *AcceptME* prevention program holds promise for the prevention of EDs among young women and is ready for large-scale implementation.

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A QUALITATIVE STUDY EXPLORING FACTORS INFLUENCING THE UPTAKE OF AND ENGAGEMENT WITH HEALTH AND WELLBEING SMARTPHONE APPS

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Background: The uptake of health and wellbeing smartphone apps is largely influenced by popularity indicators (e.g. rankings), rather than evidence-based content. Rapid disengagement is common. This study aims to explore how and why potential users 1) select and 2) engage with such apps and 3) how increased engagement could be promoted.

Methods: Semi-structured interviews and a think-aloud approach were used to allow participants to verbalise their thoughts whilst searching for a health or wellbeing app online, followed by a guided search in the UK National Health Service (NHS) 'Apps Library' and Public Health England's (PHE) 'One You' website. Recruitment took place between June and August 2019. Adults interested in using an app for behaviour change were recruited through social media. Data were analysed using the framework approach. The analysis is both inductive and deductive, with the coding framework being informed by the Theoretical Domains Framework. The results are further mapped onto the COM-B (Capability, Opportunity, Motivation - Behaviour) model. The study protocol is registered on the Open Science Framework (<https://osf.io/jrkd3/>).

Results: The following targets were identified as playing a key role in increasing the uptake of and engagement with health and wellbeing apps: 1) psychological capability (e.g. reduced cognitive load); 2) physical opportunity (e.g. low financial cost); 3) social opportunity (e.g. embedded social media); 4) automatic motivation (e.g. positive feedback). Participants believed that the promotion of evidence-based apps on NHS-related websites could be enhanced through active promotion on social media, adverts on the internet and in General Practitioner practices.

Future implications: These results can inform the development of interventions aiming to promote the uptake of and engagement with evidence-based health and wellbeing apps, providing strategic plans for the future of healthcare. The targets identified across the COM-B domains could help organisations that provide platforms for such apps to increase impact through better selection of apps.

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ASSESSING INTEREST IN A DIGITAL DIABETES PREVENTION PROGRAM USING THE PATIENT PORTAL: A CASE STUDY OF THE “VAPOR TEST” APPROACH

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Background: Patient/User engagement remains a persistent problem for digital behavior change (DBC). While mobile and web-based applications delivering health behavior change interventions are abundant, they suffer from low rates of adoption. Lack of uptake and sustained use threatens the promise of access and utility of these technologies for patients seeking support for healthy behavior. Strategies to assess interest in DBC tools and the upstream drivers and barriers to engagement are being developed and utilized to facilitate tool selection and application in digital health research, and can provide valuable insight for developers and researchers working with these types of interventions. The “vapor test” approach (offering an item for sale that has yet to be developed) is commonly used in the online retail industry to determine demand for new products or to test content options. Patient portals offer a rapid, low cost, low burden way to deploy the vapor test strategy to gauge or compare interest in DBC applications.

Purpose: To provide a case example of a vapor test delivered via patient portal to gauge interest in a digital diabetes prevention program (dDPP), and assess feasibility of meeting recruitment goals for a proposed research study involving the digital behavior change mobile application.

Methods: We constructed a brief online survey delivered via patient portal to assess interest in a dDPP, its desired functionalities, and potential barriers to engagement.

Findings: Of more than 6300 survey messages sent to patients fitting eligibility criteria, 15.7% (n=987) of messages were opened. Of the messages opened, 91% (n=899) contained responds indicating interest in a dDPP should it be available and prescribed by their provider. Features of most interest included easily accessible diabetes prevention education (82.9%, n=818) and diet and weight tracking (69.8%, n=689). Forty-eight percent (n=476) of respondents expressing interest identified/indicated they had no concerns with using a dDPP; for the 51.7% who reported a concern, privacy was the most cited concern (24.8%, n=245).

Conclusions: This case illustrates how a novel adaptation of the vapor test approach combined with patient portal delivery can deliver meaningful data to support engagement in downstream DBC interventions. This low burden strategy enabled our research team to gauge interest in a dDPP, assess feasibility of research study recruitment goals, and gain advance insight into patients’ perceived facilitators and barriers to engagement with DBC tools.

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MOBILE APPS FOR SUICIDAL IDEATION AND BEHAVIORS

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With challenges to connect individuals with mental health services, mobile health (mHealth) apps represent means of providing mental health information and interventions. However, little is known about mHealth apps targeting suicidal ideation/behaviours. Our study explores mHealth apps for suicidal thoughts/behaviours describing key features, target populations and types of health information. We identified 60 relevant iOS and android apps. Few apps (10%) were developed by health departments and organizations (e.g SAMHSA). All apps mainly focused on self-management, symptom tracking, and social support. 85% of the apps provided health information related to psychosocial aspects, including assistance/support in dealing with suicidal thoughts. All apps targeted youth and adults but none was geared towards older adults. With suicide rates in older adults on the rise and with an increasing number of older adults owning smartphone/tablet, it is crucial to adapt suicide-related apps to older adults’ needs due to their unique symptomatology of suicidal ideation.

Learning objectives

- 1- After attending this session, participants will be able to identify mHealth app related to suicidal ideation and behaviours
- 2- After attending this session, participants will be able to describe the key functional features of the suicide related mHealth apps
- 2- After attending this session, participants will be able to summarize the different types of health information provided by suicide related apps

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RESULTS FROM THE CHARGE STUDY: A STANDALONE TEXT MESSAGING-BASED WEIGHT LOSS INTERVENTION

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Background: Innovative approaches are needed to deliver effective weight loss interventions at scale. Although there has been a proliferation of trials aimed at scaling up effective obesity interventions, none have been fully delivered via text message. The multiphase optimization strategy (MOST) can assist us in developing multicomponent interventions that consist only of active components; those that have been experimentally determined to impact the chosen outcome.

Objective: To evaluate an optimized standalone text messaging obesity intervention, Charge, using a MOST framework on changes in weight.

Methods: Using a 5x2 factorial design, participants (n=534) were randomized to one of 32 experimental conditions, consisting of a combination of five two-level text message-based intervention components: message frequency (weekly vs daily), motivational messaging (self- vs expert-generated), reminders to track goals (one vs multiple), feedback type (summary score vs individual score), and comparison unit (self vs group). All study participants received a core 6-month weight loss texting intervention that included tailored behavior change goals, interactive self-monitoring, automated feedback, and skills training videos. We used a mixed effects model to assess the main effects and interactions of all five components. To define a significant main effect or interaction, we used *a priori* effect size of 0.7 kg difference between levels of a component.

Results: At baseline, the mean (SD) participant weight was 97.1 (20.3) kg. Participants had a mean (SD) of BMI of 33.9 (6.1) kg/m² and the mean (SD) age was 42.1 (11.9) years. The sample was 73.2% non-Hispanic white, and 84.8% worked full- or part-time. The mean (SD) weight loss across all participants at 6 months was 1.8 (4.9) kg. The optimized treatment package yielded, from the statistical model, a predicted average weight loss of 2.6 kg and included the following components: texting frequency set to daily; motivational messages set to expert-generated; reminders set to one; performance comparison set to self; and feedback set to summary score.

Conclusion: Standalone approaches using optimized text messaging components can have great population-level potential on reducing obesity because they are low cost, highly scalable, and modular in nature. They can reach into broad and diverse populations that do not have stable access to other approaches frequently employed in weight loss trials.

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NUDGE ME: TAILORING TEXT MESSAGES FOR PRESCRIPTION ADHERENCE THROUGH N OF 1 INTERVIEWS

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The increasing popularity and widespread use of mobile phones provides a great opportunity for researchers and health practitioners to find solutions that capitalize on mobile technologies to deliver more complex health behavior change interventions. Texting “nudges,” (i.e. a low intensity, easy to deliver intervention) creates a much needed opportunity to deliver mobile health at scale and generate greater impact. Nudges take advantage of the intuitive aspects of decision-making. In order to be effective nudge messages must compete with a deluge of information and distractions that phone users have on a daily basis. For nudge messages to be beneficial, they must be *engaging* so participants will not only pay attention but also act on the desired behavior change.

To develop appropriate and meaningful messages for medication adherence, we conducted N of 1 within subject interviews among persons taking cardiovascular medication. The goal of the interviews was to refine *a priori* messages informed by multiple behavior change theories and engagement approaches. Participants were patients in one of three large health care systems in the Rocky Mountain region of the U.S., including a Veteran’s Administration hospital, a large urban safety-net hospital and an urban hospital serving a mix of private and publicly insured patients. Following patient informed message design, we will incorporate nudge text messages into an automated reminder system for patients who experience a delay \geq seven days following a missed prescription refill.

A total of 35 one-on-one interviews were hosted through synchronous video conference or in person at each hospital. Participants viewed twelve screens, each with three messages and asked: what messages made the most sense, what message would you likely respond to, what is the most helpful about these messages, what do you like least about the messages, anything missing you wish was included, and any additional comments for each screen. After every five interviews messages the research team used a content analysis to adjust and revise messages. Patients resonated with messages tailored to their condition and medication, those with humor and positive reinforcement. The outcome of the N of 1 interviews is a theory and user informed message library with messages deemed engaging, a key element to ensure they are read and acted upon to impact medication adherence.

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IS HEALTH FEEDBACK ENCOURAGING? DIFFERENTIAL AFFECTIVE REACTIONS TO FEEDBACK FROM CALORIE AND ACTIVITY APPS

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People with obesity are consistently encouraged to lose weight by creating a calorie deficit (i.e., by consuming fewer calories than they burn). To implement this strategy, people are advised to keep track of daily calorie consumption and energy expenditure; however, mobile health (mHealth) tracking can be tedious and time-consuming (Centers for Disease Control, 2018).

Although calorie-tracking and activity-tracking apps are among the most popular mHealth apps, very little is known about how they influence users' psychological experiences. Because accurate tracking requires users to interact with these apps several times per day, these apps have the potential to influence users' affect, health attitudes, or even intentions for engaging in healthy behaviors. Moreover, the types of goals generated by calorie- and activity-tracking apps are conceptually different. Calorie apps focus on avoidance goals (i.e., not exceeding a limit), whereas activity apps focus on approach goals (i.e., reaching an objective; Elliot, 1999).

A pre-registered 2 (calorie- vs. activity-tracking app) x 2 (positive vs. negative feedback) between-subjects experiment compared reactions to a simulated week of app feedback. Participants ($N = 698$) reported higher levels of negative affect when they received feedback from a calorie (vs. activity) app, regardless of feedback valence ($p's < 0.01$). They felt less encouraged, in control, and accomplished and more stressed when receiving feedback from a calorie app and found feedback from an activity app more helpful and clear ($p's < .01$). Moreover, the type of feedback affected people's differential response to the calorie and activity app. Compared to the activity app, reactions to the calorie app were much more contingent on the valence of the feedback provided ($p's < 0.01$). When feedback came from an activity app, the valence of the feedback did not matter; however, when receiving feedback from a calorie app, people reported significantly higher negative affect and significantly lower positive affect when feedback was negatively valenced. Similar patterns of results were observed for perceptions of accomplishment, encouragement, control, and stress.

Overall, these findings suggest that people experience negative feedback from a calorie-tracking app as particularly aversive. Future research should investigate strategies that lessen the "sting" of negative calorie-tracking feedback while maintaining apps' effectiveness for behavior change.

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MEASURING SMOKING TOPOGRAPHY IN NATURAL SETTINGS USING NON-CONTACT PASSIVE WEARABLE SENSORS

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Smoking cessation interventions measure the distal outcome of smoking relapse using biochemical methods (e.g., expired CO monitoring). While accurate, such measures are unable to detect the exact moment of smoking relapse and are unable to provide insights into smoking topography (i.e., puffing behavior, including measures of the number of puffs, puff volume, puff duration, and inter-puff interval). Currently, to measure smoking topography in natural settings, researchers use portable devices that require participants to attach the cigarette to one end of the device and smoke through a mouthpiece on the other end (e.g., CReSS Pocket) which can alter natural smoking habits. Wearable sensors, on the other hand, have shown potential in measuring human activity without direct interference with the measured behavior (e.g., accelerometer sensors embedded in smartwatches). We have developed a wearable passive device (HeatSight) that can be worn as a pendant or a pin on the chest to capture smoking topography. The wearable is equipped with a miniaturized thermal sensing array that can unobtrusively capture spatial, temporal, and thermal information around the wearer without the need for direct contact with the heat-emitting object. Recently, wrist-worn sensors combined with machine learning models have been adopted by researchers to detect smoking puffs. However, these sensors are known to be confounded by behaviors such as eating and drinking, since they too involve a hand-to-mouth gesture. Our device, on the other hand, has the potential to distinguish between these confounding activities due to the rich information that it captures. We ran a feasibility in-lab study on 5 participants who were instructed to smoke a cigarette. We were able to distinguish smoking activity from other confounding activities such as eating and drinking using machine learning models with 85% accuracy. We were also able to capture smoking topography, including start and end times of each smoking event, the time the cigarette was lit, and the start and end time of each puff. We will continue to validate HeatSight in controlled and free-living environments. In-lab, 25 participants will engage in one or more smoking sessions (using a cigarette, e-cigarette, or cigar) followed by a series of confounding activities (e.g., eating and drinking). In the free-living setting, participants will be asked to wear HeatSight with a wearable camera (to validate smoking). We will use machine learning to process data from HeatSight to detect and classify each puff. We then will report on smoking topography, including puff number, duration, inter-puff interval, and time and date of the beginning of each smoking event. We believe that HeatSight will allow researchers to capture smoking behavior independent of the form of tobacco used. Ultimately, paving the way for future timely interventions to detect and prevent smoking relapse.

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PERSONAL GOAL SETTING IN DIGITAL INTERVENTION IS ASSOCIATED WITH INCREASED WEIGHT CHANGE

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Background: Adherence to self-monitoring has been associated with better outcomes in digital interventions, and goal setting tools are common components of health interventions. However, there is scarce literature on participant-created goals and their effect on weight loss outcomes. LoseNow Physician Assisted (LNPA) was a 1 year, 3-arm cluster RCT that randomly assigned 37 primary care providers and 550 patients (72% female; 85% white; 51.4 years; BMI 35.1 kg/m²) to one of three conditions: usual care, an internet-based weight loss program alone, or the internet program with physician advice. Both internet programs included self-monitoring, behavioral lessons (including content on setting behavioral goals), resources, weekly automated feedback, and a goal-setting feature which allowed participants to create and track up to 3 goals per week.

Methods: Of participants randomized to the web interventions who completed 6-month follow-up (n=266), 260 logged into the website at least once and are analyzed here. An inductive content analysis coded goals and linear regression was applied to regress effects on weight change.

Results: On average, participants set 29.0 goals (SD=22.85) over 6 months at an average of 2.4 goals per week (SD=1.09). As a percentage of all goals set, there were more goals related to diet (41.7%) and physical activity (29.5%) than other types such as weight loss (3.2%), program adherence (10.8%), behavioral skills (5.2%), mental health (2.7%), or other (6.9%). Participants who reached clinically significant weight loss of $\geq 5\%$ (n=107) set an average of 36.0 goals (SD=25.3) over 6 months; those who lost 1–4.99% (n=89) set 28.2 goals (SD=21.4); and those who lost $< 1\%$ or gained weight (n=64) set 18.8 goals (SD=15.4). Regression analyses showed that significantly more goals were set among those who lost 1–4.99% ($p < 0.0001$) and who lost $\geq 5\%$ ($p < 0.0001$) compared to the reference group ($< 1\%$ loss). Increased utilization of the online goal-setting feature was associated with greater weight loss at 6 months ($B_1 = -0.079$, $SE=0.015$, $p < 0.0001$), and after controlling for total logins as a proxy for use of other LNPA website components ($B_1 = -0.03$, $SE=0.014$, $p=0.017$). These results indicate that greater usage of a participant-driven goal-setting component is associated with increased weight loss. Future research should directly compare weight loss programs with and without participant goal setting components to determine causality.

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OUTCOMES OF PATIENT CENTERED MHEALTH MEDICAL REGIMEN PROGRAM FOR AFRICAN AMERICANS WITH UNCONTROLLED HYPERTENSION

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Background: Uncontrolled hypertension (HTN) and medication nonadherence (MNA) are more prominent among African Americans (AA) compared to non-Hispanic Whites. MNA is the leading modifiable behavior to improve BP control. Using mobile health (mHealth) technology enables real-time monitoring of MA and blood pressure (BP), facilitating timely patient provider communication including, tailored reinforcement/motivational feedback to patients and quicker titration changes by providers. The purpose of the current study was to report initial findings of an ongoing 6-month randomized control efficacy mHealth trial with 6 month follow-up addressing MA and BP control among AA adults with uncontrolled HTN and poor MA.

Methods: The two-arm efficacy trial includes an experimental (Smartphone Med Adherence Stops HTN-SMASH) group and an enhanced attention control (AC) group. SMASH participants utilize a SMASH app interfaced with a Blue toothed BP monitor and Blue toothed pill cap. AC participants receive text messages including links to PDFs and brief video clips containing healthy lifestyle tips providing comparable digital contact. This report involves the first 80 AA adults, 18- 59 years old, with the sole diagnosis of uncontrolled systolic HTN and poor MA.

Results: Participants include 80 AA adults with uncontrolled HTN (average age 58.7 \pm 9.03). They were randomly assigned to either SMASH (n=40) or AC group (n= 40). At baseline, no participants had controlled systolic BP (SMASH: 143.0 vs AC: 141.0 mmHg). Resting SBPs were significantly lower in the SMASH group versus AC group at each subsequent evaluation (Month 1: 129.4 vs. 135.4; Month 3: 126.6 vs. 134.7; Month 6: 125.1 vs. 137.9 mmHg; all p-values $< .01$). Adherence levels (i.e., intake within 1.5 hours of designated times) were significantly higher in the SMASH group at 1, 3, and 6-months compared to the AC group, respectively (Month 1: 91% vs. 53%; Month 3: 89% vs. 39%; Month 6: 89% vs. 29%; all p-values $< .01$). Our smartphone enabled medical regimen self-management program may be an effective solution for the promotion of MA resulting in statistically and clinically significant reductions in SBP among AA adults with uncontrolled HTN.

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LET'S TWEET ABOUT IT: A CONTENT ANALYSIS OF #HOWIFIGHTDEPRESSION TWEETS

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People have taken to social media to discuss mental health issues not only in private online communities but also on public platforms including Twitter. On June 19, 2019, the hashtag #HowIFightDepression was trending on Twitter meaning it grew rapidly enough for Twitter to list it as one of the most popularly discussed hashtags of the moment. The purpose of the hashtag was for people to share how they cope with depression. The present study aimed to content analyze the tweets to determine how people discuss their depression coping behaviors. Tweets with the hashtag were pulled with a sample window from June 19, 2019 to June 23, 2019. After retweets were excluded, a total of 9616 potentially eligible tweets remained. A total of 700 tweets were randomly selected for coding. A total of 171 tweets were excluded as they were in a foreign language or cryptic. A random sample of 100 tweets was reviewed by raters to develop a coding scheme; where the raters highlighted recurring coping strategies that also had clinical value. Two raters then coded 529 tweets with 87% agreement ($\kappa=.866$). If a tweet mentioned more than one coping strategy, both were counted. Frequencies of each coping strategy were calculated. Coping strategies were then classified as potentially helpful or harmful based on whether the coping strategy was likely to improve or worsen depression from a behavioral perspective. A total of 15 coping strategies were identified, 11 of which were potentially helpful and 4 were potentially harmful. Many tweets ($n = 226$, 43%) reported more than one strategy. Of the 529 tweets, potentially helpful coping strategies included keeping a positive attitude ($n = 178$, 34%), social support seeking ($n = 130$, 25%), treatment (therapy or medication; $n = 84$, 16%), hobby ($n = 84$, 16%), being productive (e.g., goal-planning, running errands; $n = 66$, 12%), mindfulness ($n = 56$, 11%), spending time with pets/animals ($n = 46$, 9%), exercise ($n = 38$, 7%), spiritual activities ($n = 38$, 7%), using humor ($n = 17$, 3%), and using alternative medicine (e.g. supplements, vitamins; $n = 11$, 2%). Potentially harmful coping strategies included non-goal oriented sedentary activity (e.g., TV, video games; $n = 110$, $n = 21\%$), eating ($n = 42$, 8%), sleep ($n = 33$, 6%), taking recreational drugs ($n = 17$, 3%). A total of 748 coping strategies (78.7%) mentioned were potentially helpful, while 202 (21.2%) listed were potentially harmful. Many tweets ($n = 226$, 43%) reported more than one strategy. A total of 92 tweets (13%) mentioned a combination of both types of coping strategies. Results showed that most coping strategies shared in #HowIFightDepression tweets were behaviors likely to be helpful in improving depression. Given the reach of viral hashtags, social media may be a way to facilitate positive, destigmatizing conversations about depression. Further research should explore how social media can be used as a platform generate peer support for mental health problems.

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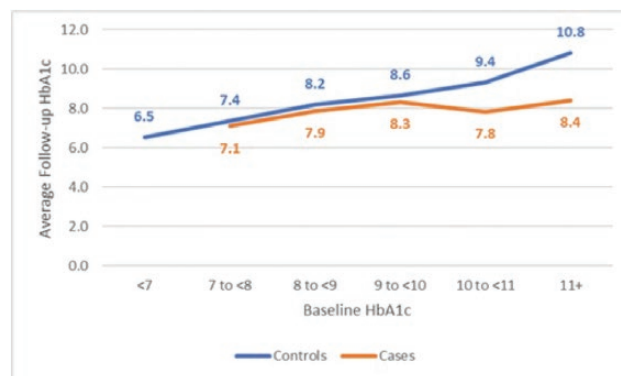
ONE DROP'S DIGITAL CARE SOLUTION PRODUCES 6-MONTH A1C BENEFIT RELATIVE TO MATCHED CONTROLS

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Objective: By 2045, one in eight people will have type 2 diabetes (T2D); 48% will receive digital care. One Drop's (OD) digital care solution includes a robust app, ADA-accredited in-app coaching and Bluetooth-connected meter. An internally-conducted RCT found OD improved the 3-mo A1c of people with T2D. Sanofi sponsored a third-party prospective, matched-controlled trial to test OD's 6-mo effects on medication taking and A1c.

Methods: Participants were members of a large insurer with T2D and A1c $\geq 7\%$ naïve to OD who consented to participate between Oct 2017 and July 2018. Matched controls were members meeting study criteria one year prior to the study who did not receive OD. Controls were matched (2:1) on study enrollment month, age ± 5 yrs, gender, and drug type. Claims data assessed adherence, a central lab assessed A1c, app data assessed using OD, and surveys assessed satisfaction with OD. Descriptive statistics summarized the sample, using OD, and satisfaction. ANCOVA models, controlling for baseline adherence, A1c and other covariates, separately, tested 6-mo adherence and A1c group differences. For A1c, the interaction term was retained to examine group effects at different baseline A1c levels. Bonferroni-corrected t-tests examined effects at baseline, follow-up, and over time by group.

Results: 110 of the recruited sample ($N = 149$) were matched to 220 controls. Participants were 55.1 ± 7.4 years old, 45% female, with baseline A1c of $8.7\% \pm 1.8\%$. The OD and control group's adherence were comparable at 6 mo. For participants with a baseline A1c $\geq 8\%$, A1c was significantly lower than controls at 6 mos ($p < .05$). Overall, A1c decreased by an absolute -1.24% in the OD group and -0.37% in the control group ($p < .0001$ and $p = .01$). Of intervened participants, 87% used the app, 82% used the meter, 64% used coaching, and 77% were satisfied or very satisfied with OD.



Conclusion: OD's digital care solution had no effect on medication taking, but a substantial effect on A1c for people $\geq 8\%$. There is no optimal way to measure adherence. Multiple measures are recommended, but only claims data were used here. Adherence to insulin vs. orals differs. We were unable to tease these apart nor test insulin vs. oral adherence, separately. In other studies, OD significantly reduced carbohydrate intake and improved physical activity. Both might have driven the A1c benefit. OD's effect on A1c is consistent with other studies, and highlights OD's value for diabetes care.

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SCALING OUT AN ONLINE PSYCHO-ONCOLOGY SUPPORT INTERVENTION: OUTCOMES OF THE BRECONDA IMPLEMENTATION

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Introduction: Randomised controlled trials support the efficacy of BRECONDA, an online decision support intervention for women with breast cancer considering breast reconstruction, in reducing decisional conflict and improving information satisfaction. In light of this, national level implementation (Australia) was undertaken. This study aimed to report implementation outcome data relating to multiple domains (adoption, penetration, acceptability, appropriateness, fidelity, sustainability).

Methods: At registration, users provided information about general characteristics (age, place of residence, type of user). Women facing the breast cancer surgical decision (decision-makers) also completed questions assessing decisional conflict, information satisfaction, and surgical context information. Within 2-3 months post-registration, a subset of users willing to participate in research completed a post survey assessing their use of, and responses to, the website; and for decision-makers only, decisional conflict and information satisfaction. Pre-post data were compared for decisional conflict and information satisfaction. Website usage data were obtained from the implementing organisation.

Results: Since implementation (2017), there have been 2633 registered users from 32 countries (80% Australian-based; 67% urban; 33% rural), with a steady adoption. The website has received >220,000 page hits over a 2.5 year period. Most users (86%) were the target audience of decision-makers (across a range of ages, education levels, cancer diagnostic characteristics), with an additional 11% of users being health professionals, including oncology clinicians/surgeons, breast care nurses, and psychologists/counsellors. High satisfaction with the website was evident from decision-makers, with 68% of these users spending 30 mins to 2 hours using BRECONDA. Pre-post data demonstrate acceptability and fidelity through significant reductions in decisional conflict ($d=1.12$) and improvements in information satisfaction ($d=.43$). 90% of health professionals post-survey were recommending/intending to recommend BRECONDA to patients. Sustainability is ensured through contractual agreements with the implementing organisation mandating regular reviews and content updates.

Conclusion: Taken together, these implementation outcome data are indicative of an intervention that is acceptable and appropriate for use by the target audience of women with breast cancer, as well as the broader audience of health professionals.

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IMPACT OF TOBACCO CONSUMPTION AMONG CHILEAN HEALTHCARE PROVIDERS AND THEIR SMOKING CESSATION ATTITUDES

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Background: Smokers are frequent hospital users, thereby, presenting a good opportunity to offer smoking cessation programs to smokers. Healthcare providers (HCP) in direct contact with patients can be the most effective at initiating tobacco cessation treatments. However, HCP's tobacco consumption and cessation related attitudes are known to affect the provision of cessation interventions. Lesser known are Latino HCP's tobacco intervention attitudes and practices. This study aimed to examine the associations between tobacco cessation attitudes (TCA), levels of consumption, and demographics among Latino HCP's.

Methods: A quantitative, correlational, cross-sectional design was used. Participants came from a larger, Chilean National Research and Development Fund in Healthcare (FONIS) investigation assessing the design and implementation of a support intervention for smoking cessation in smokers hospitalized in Chile. 66 HCP's working in a public hospital in Santiago, Chile self-reported demographics (age, gender, profession), tobacco consumption, and tobacco cessation attitudes. The tobacco cessation attitudes of HCP's were assessed with a 5-item Acceptability of Brief Counseling toward tobacco cessation scale which was modified from the Abbreviated Acceptability Rating Profile (AARP)¹, and two single item Likert-type questions regarding HCP's 1) belief that smoking is harmful for patients, and 2) belief it is their duty to aid patients quit smoking.

Results: Majority of HCP's (34 years old, 83% female, 58.5% technical nurses) did not consume tobacco (67%). Pearson's correlation revealed that greater HCP age was significantly associated with less belief that smoking is harmful for their patients ($r = -.36, p = .004$). HCP's Acceptability of Brief Counseling ($M = 22, SD = 5.5$) was positively associated with the belief that smoking is harmful for patients ($r = .306, p = .016$) and duty to help patients quit smoking ($r = .574, p = .000$).

Conclusion: Findings provide evidence that HCP's tobacco cessation attitudes are important factors to consider during cessation program implementation. Further research should focus on increasing HCP's acceptability of providing cessation care to their patients. Specifically, tailoring education and interventions by age might serve useful to address the differences in tobacco cessation attitudes which may subsequently influence their tobacco cessation practices. Further investigation of Latino HCP's tobacco cessation attitudes and practices are warranted to aid in the identification of programs that will best address their tobacco training needs.

1.Tarnowski, K. J., & Simonian, S. J. (1992). Assessing treatment acceptance: The abbreviated acceptability rating profile. *Journal of Behavior Therapy and Experimental Psychiatry*, 23(2), 101–106. doi: 10.1016/0005-7916(92)90007-6

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HOW FEASIBLE IS YOUR STUDY? A CHECKLIST FOR PRACTICE-BASED RESEARCHERS

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Practice-based research often includes important community partners with limited capacity for research participation. For example, medical and nursing staff may have little or no research training and no protected time for research; the organization lacks clear and accessible policies and procedures on IRB; or there are no established communication lines between research administration and clinical management. Researchers and community partners may enter into collaboration with assumptions that may impede the project, threaten empirical validity, or harm long-term relationships. Both parties carry assumptions into the relationship. The research team normally has the most at stake for ensuring project success. For the community partner, the project is one of many initiatives occurring in an under-resourced and complex organization and may likely be seen as a low priority and perhaps even a nuisance.

The level of awareness among researchers and community partners of potential problems in their project is not always clear. Checklists are a common feature in manufacturing industries and a growing feature in health care systems, including research. However, most practice-based checklists do not mutually favor researchers and partners, are too lengthy, or focus on responding to barriers rather than examining assumptions and adopting a proactive stance. The purpose of this pragmatic checklist is to increase the chance of collaboration success by resolving problematic assumptions.

Our checklist is based on a careful review of existing scientific literature, our own experience, and constructs from the Consolidated Framework for Implementation Research (CFIR). It includes four crucial time events: Before Signing the Memorandum of Agreement; Before Submitting to the IRB; Before Entering the Hospital or Clinic; and Before Collecting Data. Researchers can use the checklist to verify whether the relationship with the community partner is clear and to identify any potential problems.

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INTERACTIVE WEBSITE FOR HEAD AND NECK CANCER PATIENTS: ADHERENCE AND COPING PROGRAM TO PREVENT DYSPHAGIA AFTER RADIATION

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Introduction: Pharyngeal and laryngeal cancers are highly curable; however survivors are at high risk for long-term dysphagia after radiation. To address lack of access to preventive care in community settings, we developed a responsive web-based application to help patients adhere to preventive swallowing exercises and cope with radiation side effects. We conducted an interim study analysis to determine website usage characteristics and to examine the effect size for future trials.

Methods: Pharyngeal and laryngeal cancer patients were recruited for enrollment by speech language pathologists before primary radiation and introduced to the interactive website. The program (English and Spanish) features tracking logs for preventive exercises, instructional videos, patient stories and search features. Patients' self-reported swallowing function was assessed with the MD Anderson Dysphagia Inventory (MDADI) at baseline and at 6 months. Adherence to preventive exercises was assessed during the 10 week intervention. Number of unique website visits, total duration of website exposure, and rankings of the most popular webpages were calculated. Preliminary regression models were run using adherence and MDADI as outcomes.

Results: Of the 160 enrolled, 96 had 10-week adherence data and 61 had 6-month MDADI data. The average age was 63 (SD=12.26), 49.4% were from rural counties, 44% had a high school education or lower, and 42% reported annual income of \$30,000 or less. The average number of visits was 5.49 (SD= 9.96) and the average total time spent with the website was 41.09 minutes (SD =88.48). Preliminary analyses indicated that number of unique visits to the website was independently associated with increased adherence to preventive exercises ($p=.001-.008$).

Conclusion: Our website showed significant effects in promoting adherence to swallowing exercises. However, our return visit rate showed that the platform needs improvement in navigability and usability for this older population undergoing challenging treatment in community settings with low resources.

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DEMONSTRATING APPLICATIONS OF TECHNOLOGY IN PHYSICAL MEDICINE & REHABILITATION WITH CREATIVE MULTI-MEDIA MEDICAL EDUCATION

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Background: Value-driven reimbursement will challenge clinicians to improve patient adherence and clinical outcomes with alternate methods of healthcare delivery.

Purpose: In this medical education intervention, multi-media teaching modalities were used to demonstrate motivational interviewing (MI) and clinical applications of technology in an outpatient Physical Medicine and Rehabilitation (PM&R) setting.

Methods: Eighty-three first and second year occupational therapy students (83% female) within an academic program received a 30-minute classroom presentation taught by a medical educator and completed a confidential pre and post survey to evaluate their needs, demands and attitude (0-10 Likert scale) about the PM&R workspace, the role of technology in the patient experience and the clinician's responsibility to increase patient adherence. Time series still image photography was used in combination with an interactive three-dimensional virtual tour to show the strategic design of a PM&R workspace. Video recordings of a role play between a clinician and a standardized patient living with chronic pain demonstrated an in-person clinical encounter. There were four examples of technology: (1) touchscreen display monitors to interact with the patient (2) video recording and analysis of a physical performance evaluation with the capacity to send images to the Electronic Medical Record (3) Movement Sensor Technology that quantifies objective metrics about movement and performance and (4) a Connected Health (CH) mobile device application (m-Health) that enables the clinician to monitor and prescribe treatment plans to the patient in their home. Subtitles were added to the videos to highlight key teaching points.

Results: Attitude scores significantly increased ($p < 0.001$) for the importance of the workspace in the evaluation of patients (8.1 vs 9.5, $SD=1.8$), the role of technology to enhance the patient experience (7.3 vs 9.2, $SD=2.3$) and the clinician's responsibility to increase patient adherence with a prescribed home exercise plan (7.6 vs 8.3, $SD=2.5$). None of the students were opposed to using the examples of technology in their future practice. The majority were interested in learning more about MI (98%) and clinical applications of technology (96%).

Conclusion: Creative multi-media teaching applications can provide a virtual learning experience that has the potential to enhance medical education.

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MENTAL HEALTH ANTI-STIGMA DEVELOPMENT IN RESIDENCY EDUCATION

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In recent years, the ACGME has increased its focus on resident wellness and has incorporated wellness initiatives into accreditation requirements. There are, however, no specific guidelines addressing reduction of physician-focused mental health stigma in residency education despite stigma being a key barrier to seeking services. There are examples in medicine of the importance of stigma reduction for medical professionals such as that proposed in terms of obesity, serious mental illness, and HIV. Given that US residency training appears to have a negative impact on the health and wellness of trainees and associations are present among patient outcomes, and resident/physician morbidity and mortality outcomes, it is imperative that programs more effectively address mental health stigma during training.

Method: The questions were part of a larger omnibus survey conducted by the Council of Academic Family Medicine Educational Research Alliance (CERA). The methodology of the CERA Program Director Survey has previously been described in detail. The CERA steering committee evaluated questions for consistency and pre testing was conducted. Program Directors were asked about the presence of mental health anti-stigma programming and details regarding that programming. Of the PDs surveyed, 57% (n=128) report the absence of mental health anti-stigma programming. Further, 30% that did have programming (n=68) indicated the focus of programming on physician mental health. The majority of programs (52%) do not have a mental health anti-stigma program within the residency program. Further data analysis focused on program characteristics and the presence of mental health champions in programs.

Conclusions: The purpose of this study was to examine the presence of anti-stigma programming in wellness programs and the target of those programs. When examining resident wellness programs, the role of mental health stigma in the wellness and mental health of physicians is of paramount importance due to the evidence of stigma as a key barrier to residents and physicians seeking care. Given that stigma is a key barrier to care, the absence of anti-stigma programming in resident wellness and mental health programs is a curious one and may confirm the presence of stigma. Of the Program Directors who did endorse the presence of anti-stigma programming, most programs are focused on reducing mental health stigma toward patient populations. This result, while expected, speaks to a gap in wellness curricula focused on resident and physician wellness. While research suggests that physicians' reluctance to seek mental health services is, in part, due to repercussions related to seeking care when obtaining licensure, there are potentially other factors operating at the level of physician self-care, and exploring the level of stigma in help-seeking is likely one of those factors.

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DIFFERENCES IN KNOWLEDGE ABOUT SICKLE CELL DISEASE AND EARLY CARRIER SCREENING BETWEEN PARENTS AND ADOLESCENTS IN SAUDI ARABIA

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Background: Sickle cell disease (SCD) is the most common genetic disorder in Saudi Arabia. SCD is an autosomal recessive disease; a child can develop the disease only if her two parents carry the abnormal gene. But most do not know their carrier status and have poor knowledge of the disease etiology and inheritance pattern. This poses potentially serious health implications for future children. A possible preventive measure that has had success in other cultures is early carrier screening for adolescents to guide the traditional marriage arrangements (i.e., family spouse selection). However, little is known about how Saudi families would perceive such a program. This study examined knowledge of SCD and societal acceptance among parents and adolescents for a school-based SCD carrier screening program.

Methods: Parents (N=2,317) and high school students (N=763) from Alhasa municipality, where the rate of SCD is among the highest in Saudi Arabia, were surveyed through Qualtrics in 2019, using an instrument developed from focus groups with the target population. Genetic counselors and physicians reviewed the instrument for face and content validity. The instrument was pilot tested (N=10) and revised to ensure readability. Eleven-point Likert scales (ranging 0-10) asked participants to what extent they agree/disagree to statements related to SCD knowledge, attitudes towards school-based carrier screening, and willingness to participate in such a program. Independent-samples t-tests were conducted to compare these three outcomes using SPSS v24.

Results: Parents and students reported high willingness to participate (M= 9.78, SD= 0.94; M= 8.97, SD= 1.95, respectively.) However, parents reported a significantly higher score in knowledge (Cohen's d= 0.55, p < 0.000), a significantly higher score in favorable attitudes towards school-based carrier screening (Cohen's d= 0.25, p < 0.000), and a significantly higher score of willingness to participate (Cohen's d= 0.64, p < 0.000).

Conclusions: Saudi parents and adolescents are supportive of school-based SCD carrier screening for adolescents, with parents reporting more knowledge of the disease and more favorable attitudes toward early interventions, perhaps due to higher education, more familiarity with the disease in the community, and a stronger sense of responsibility. In addition, the reported high societal acceptance paves the way for policymakers in Saudi Arabia to enact and implement school-based carrier screening programs, providing families with critical information to arrange healthy marriages. Countries with similar traditions of interfamily marriages, which help perpetuate hereditary diseases, have demonstrated the feasibility and effectiveness of such programs in preventing new cases of SCD. These offer a great working model for Saudi Arabia to curb the high rates of this debilitating disease.

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PERCEIVED FOOD SWAMP EXPOSURE PREDICTS SELF-REPORTED DIET QUALITY, HEALTH STATUS AND WEIGHT: IMPLICATIONS FOR PUBLIC POLICY

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Food swamps have been described as neighborhoods where unhealthy food options inundate healthier alternatives. Little is known about the effect of food retail environments on self-reported health quality, diet quality and weight status, particularly for historically marginalized groups.

The purpose of this study is to examine the relationship between food swamps exposure and self-reported health quality, diet quality, and weight status.

A national, racially/ethnically diverse sample of U.S. adults completed an online survey about the number of different food stores they have within 1 mile from their home. We then created the Retail Food Environment Index (RFEI) and modified Retail Food Environment Index (mRFEI) to measure self-reported food swamp exposure.

Predicted probabilities of self-reported health quality, diet quality, and weight status were calculated using the fitted values from the ordinal logistic regression models for each dependent variable. All regression models controlled for socio-demographic factors such as age, gender, income, education level, race, car ownership, family structure, and region, together with food swamp measured with RFEI in each model. We also explored the interaction effect between income and race in each model.

The final sample was 4,694 participants with 38.6% male, 71.3% White/Caucasian, 21.4% African American, 4.0% Hispanic, 3.3% multi-race, 42.4% single, and 48.4% low income. The mean age was 40.7 years old and 48.8% of respondents lived in an urban area, while 22.3% lived in a rural area. More than one third (35.2%) lived in food swamp areas based on RFEI and 34.3% lived in food swamp areas based on mRFEI. More than half (57.7%) of the sample had access to a vehicle. 73.0% of them were in good or above good health quality and 19.3% had high diet quality but more than half (55.4%) were overweight. Regression results showed that residents of non-food swamp areas had a higher diet quality (OR=1.265, p< .01), and self-reported health quality (OR=1.172, p< .01) than those living in food swamp areas. In addition, Black/African Americans had a lower diet quality (OR=.491, p< .001) than Whites. Individuals from middle or high-income levels had a higher quality diet (OR=1.228, p< .05) and health quality (OR=1.699, p< .001) rating and lower weight status (OR=.848, p< .05) than those with low-income levels. Multiracial individuals from middle or higher income levels tended to have higher diet quality (OR=2.588, p< .05) rating than those White individuals with low-income levels.

These findings suggest that an individual's perceptions of the built food environment may play an important role in determining diet quality, weight, and health status. Future municipal policy efforts to simultaneously promote access to healthy food and disincentivize unhealthy food retailers should maximize resident engagement during the policy development stage.

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QUALITATIVE EXPLORATION OF PERCEPTIONS OF SEXUAL ASSAULT AND ASSOCIATED CONSEQUENCES AMONG LGBTQ+ COLLEGE STUDENTS

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LGBTQ+ individuals face numerous challenges related to minority stress, among them prejudice, discrimination, family disapproval, and violence, including sexual assault victimization. Research on the consequences of sexual assault victimization in LGBTQ+ communities is limited. The purpose of this qualitative study was to better understand the negative consequences of sexual assault, as well as to propose interpersonal recommendations and policy changes to improve mental and physical health support, and reporting procedures to better serve LGBTQ+ college student sexual assault survivors. Thematic analysis was utilized to identify six major themes and 20 related subthemes. The major themes included: (a) Sense of Community (b) Cisheteronormativity, (c) Consequences of Sexual Assault, (d) Conditional Disclosure of Sexual Assault, (e) Hesitance to Engage with Institutions Following Sexual Assault, and (f) Changes to Improve Institutional Support. The greater severity of sexual assault victimization consequences faced by this population, coupled with the widespread distrust of the institutions tasked with providing survivors mental and physical health treatment and criminal justice, corroborate previous research underscoring the imperative of increasing funding for, and tailoring reporting procedures and support services to the needs of LGBTQ+ college students.

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GROUP AND WEB-BASED COGNITIVE BEHAVIORAL THERAPY FOR AFRICAN-AMERICANS WITH TYPE-2 DIABETES

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Background: African-Americans are at twice the risk of diabetes complications compared to Whites. Cognitive Behavioral Therapy (CBT) has many effective applications in patients with chronic conditions, including diabetes. Diabetes self-management that integrates education with behavioral strategies has demonstrated improved outcomes and patient satisfaction. Little is known about different approaches for effective CBT in African Americans patients with uncontrolled diabetes.

Objective: TheLIGHT (Lifestyle Intervention Guidance for a Healthier Tomorrow) is a pilot study that aims to assess whether a culturally tailored, cognitive behavior therapy (CT-CB) intervention can improve outcomes for African-American patients with poorly controlled diabetes. Our primary goal in this study is to assess the feasibility and patient perception of an in-person group and web-based CT-CB intervention in this high-risk population.

Methods: A randomized, pilot study was conducted at an Emory Clinic in Atlanta in 2019. Twenty adult African American patients with uncontrolled type-2 diabetes (HbA1C > 8 %) underwent a six-session CT-CB intervention program. Participants were randomly assigned to biweekly in-person or web-based group sessions. Participant attitudes and perceptions were evaluated via Likert-scale questionnaires after each session and focus group at the end of the intervention. MaxQDA software was used to analyze focus group data.

Results: The average age of participants was 53 years and 70% were women. The in-person and web-based interventions had a similar retention rate (80 %). Both the intervention groups rated the benefits of the intervention similar as “Strongly agree” (60%) and “Agree” (40%). The ease of incorporating the intervention into their daily activities was somewhat lower (70 %). Examples of the inductive codes from the focus group data included: knowledge, belonging, and sense of community. The deductive codes included themes such as: Culture, eating habits, and stress. Overall, participants valued the holistic approach of CT-CB as it accounted for pertinent factors in their lives such as stress management.

Conclusions: African Americans with uncontrolled diabetes favorably rated both the in-person group and web-based group CT-CB interventions. Our study provides preliminary evidence regarding the feasibility and potential efficacy of a CT-CB intervention as a useful modality for improving diabetes self-management in African Americans.

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PERCEIVED SELF-EFFICACY IN LATINA IMMIGRANT MOTHERS WITH HPV VACCINATION IN THEIR 9-12-YEAR-OLD DAUGHTERS

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Introduction: Human Papillomavirus (HPV) vaccination uptake remains low in the United States. The Health Belief Model (HBM) postulates that an individual's perceived risk and self-efficacy (judgement of one's self to complete an action) influence the decision to execute a preventive health behavior. Many studies have investigated factors associated with perceived risk in preventable and early detected cancers. Fewer studies have investigated the factors associated with self-efficacy.

Objectives: We examined factors associated with Latina immigrant mothers perceived self-efficacy to have their 9-12-year-old daughters vaccinated against HPV.

Methods: As part of a group-randomized trial to promote HPV vaccination, a baseline interviewer-administered survey assessing sociodemographics, knowledge and perceived risk of cervical cancer/HPV infection, self-efficacy, and intention to vaccinate their unvaccinated daughters was administered to mothers. A logistic regression was conducted to determine if self-efficacy was associated with vaccine intention when controlling for other variables. In addition, a multivariable linear regression was conducted to determine factors associated with increased self-efficacy scores.

Results: Of 316 participants, 62.9% indicated hesitancy (an answer of "don't know/not sure") to vaccinate their daughters against HPV. Mothers intending to vaccinate had higher average self-efficacy scores than those hesitant to do so (7.29 ± 1.53 v. 5.54 ± 1.42 points respectively; $p < 0.001$). Self-efficacy was strongly associated with vaccine intention when controlling for other variables ($p < 0.001$). The only significant predictor of changes in self-efficacy scores was mothers reporting "yes" or "no" to HPV awareness compared to "don't know/not sure" ($B=0.756$, $p < 0.001$; $B=0.594$, $p=0.04$).

Conclusion: Further efforts should focus on increasing awareness regarding HPV and cervical cancer to facilitate heightening perceived self-efficacy in mothers to vaccinate their daughters against HPV.

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AN EXAMINATION OF FAMILIAL AND COMMUNITY SUPPORT IN LOW INCOME WOMEN'S LEVELS OF PHYSICAL ACTIVITY ADOPTION

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Heart disease continues to be the leading cause of death for women in the United States. Research has revealed that modifiable risk factors for heart disease, such as low levels of physical activity, are especially prevalent among low income and ethnic minority mothers due to family obligations and role demands. Few studies have examined individual and environmental factors, such as familial and communal support, in regards to low income mother's engagement in physical activity. The current study examined whether low-income Latina and non-Latina mothers differed in their physical activity levels depending on the support received from their friends, family, and community. It was hypothesized that Latina mothers who experienced more support from family or friends and a higher sense of community would engage in higher levels of physical activity compared to non-Latina mothers. Thirty low income Latina (18) and non-Latina (12) mothers participated in a three-month exercise program and completed self-report questionnaires on social support (SSFE), sense of community (SOC), and minutes of moderate-intensity physical activity (CALQ) at baseline and 3 months post-intervention. Mothers also wore a Fitbit to monitor their levels of physical activity for 3 consecutive days and participated in a focus group at 3 months post-intervention. Regression analyses revealed no significant group differences between Latina and non-Latina mothers on physical activity ($p=.07$). Additionally, support from others for exercise did not significantly affect physical activity levels ($p=.07$). Qualitative data revealed that mothers' relationships with others served as both a barrier and facilitator to physical activity. These results suggest the need to further explore possible barriers and facilitators to physical activity adoption among low income and ethnic minority mothers.

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CULTURAL NORM OF SILENCE STIFLES HEALTH INFO SEEKING FOR SENSITIVE TOPICS AMONG 2ND GENERATION CHINESE AMERICAN EMERGING ADULTS

Ichhya Pant, MPH, DrPH(C)¹, Swechhya Pant, Bachelor of Arts²¹GWU School of Public Health, Arlington, VA; ²Nepali YOUth Alliance, ATLANTA, GA**Background:** Currently, there is limited data available via national surveys and through existing scientific literature for health information seeking behaviors of Chinese American emerging adults ages 18 to 29 years old.**Objectives:** To bridge this gap within existing literature, a qualitative study was conducted to understand their health information needs, preferred sources, and recommendations to improve access and availability for health information.**Methods:** We employed a phenomenological approach and conducted sixteen semi-structured in-depth interviews with Chinese American emerging adults residing in different regions of the United States between March 2017 to September 2018. Thematic analysis was conducted to identify, analyze and report patterns or themes within the data.**Results:** Family, friends, health care professionals, teachers, and the internet were preferred sources for non-sensitive health information. A culture of silent escapism was found to be the prevailing norm when confronted with sensitive health topics. Normative cultural factors inhibit health information seeking for sexual, reproductive, and mental health according to participants. Various forms of mental “escapes” were described as coping mechanisms employed to face sexual, reproductive or mental health crises. Culturally responsive, digitally accessible, private, and normatively influential multi-level public health solutions were recommendations made for making health information more accessible and salient in the Chinese American community.**Discussion:** Future studies should focus on how to mitigate the normative effect of engaging in silent escapism in response to sensitive health crises. Participant recommendations can inform the design and rationale for future public health solutions to improve accessibility and availability of sensitive health information for Chinese American emerging adults.

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A LONGITUDINAL ANALYSIS OF CHILDHOOD SEXUAL ABUSE AND RISK FOR INTIMATE PARTNER VIOLENCE REVICTIMIZATION IN GAY AND BISEXUAL MEN

Danielle S. Berke, Ph.D.¹, Raymond L. Moody, M.A.², Christian Grov, PhD, MPH³, H. Jonathon Rendina, PhD, MPH⁴¹Hunter College of The City University of New York, CUNY Graduate Center, New York, NY; ²The Graduate Center of The City University of New York, New York, NY; ³CUNY Graduate School of Public Health and Health Policy, New York, NY; ⁴Hunter College and The Graduate Center, CUNY, New York, NY**Objective:** Childhood sexual abuse (CSA) has been associated with serious adverse health consequences across the life course including increased risk of exposure to intimate partner violence victimization (IPV) in adulthood. Although gay and bisexual men (GBM) may experience elevated rates of both CSA and IPV victimization, little research has examined risk factors for revictimization in this high-need population. This study examined the impact of general (i.e., emotion regulation difficulties) and sexual minority specific (i.e., internalized homophobia) risk factors on the association between CSA and IPV among GBM.**Method:** We collected longitudinal data from 943 participants as part of the *One Thousand Strong* cohort, a study of HIV-negative GBM from across the United States. Measurements included history of CSA reported at baseline, 24-month internalized homophobia and emotion regulation difficulties, and baseline and 36-month IPV. We analyzed data using longitudinal structural equation models.**Results:** For GBM who reported experiencing at least one act of IPV victimization at the 36-month assessment, CSA was significantly associated with frequency of IPV victimization for those with high, but not low levels of internalized homophobia. In contrast, CSA was only associated with frequency of IPV victimization for those with low levels of emotion regulation difficulties.**Conclusion:** These results indicate that activation of internalized homophobia following childhood sexual abuse may exacerbate risk for revictimization experiences in adulthood. Future work is needed to investigate how mitigation of this modifiable risk factor may be targeted to inform violence prevention interventions for GBM.

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A COMPREHENSIVE ASSESSMENT OF WELL-BEING AMONG LATINXS AND NON-LATINX WHITE ADULTS: A PROPENSITY SCORE MATCHING STUDY.

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Latinxs are soon expected to account for 30% of the US population. Few studies have examined well-being among them and most have sample or measurement limitations. Using a propensity score matching design, we examine differences in overall well-being and its subdomains among Latinxs and non-Latinx Whites (hereinafter called Whites). Data are derived from the WELL for Life initiative, a global effort aimed to accelerate the science of well-being. Using an online registry, participants (N=1,635) completed a novel and psychometrically validated well-being measure, the Stanford WELL for Life Scale (SWLS). The SWLS assesses overall well-being, and 10 domains including physical health, lifestyle behaviors, stress and resilience, financial stability, spirituality/religiosity, purpose and meaning, sense of self, experience of emotions, social connectedness, and exploration/creativity. Using a pair matching propensity score algorithm, Latinxs were matched to a sample of Whites on age, education, gender and marital status (n=556, mean age=41 years, 79% women, 42% married). Multiple regression models were then employed to evaluate group differences. No group differences were found for overall well-being ($\beta = 2.01, p = .10$). Compared to Whites, Latinxs reported higher scores on the spirituality/religiosity domain ($\beta = 1.62, p < .01$). Latinxs also reported lower scores on lifestyle behaviors ($\beta = -.24, p < .05$) compared to their matched White counterparts. Men reported more salubrious scores compared to their female counterparts in the physical health domain ($\beta = .36, p < .05$). Across models, higher levels of education -college or above- were consistently predictive of higher well-being scores. Notably, regression models that control for demographics without a formal propensity score matching resulted in more statistically significant differences. Findings point to complex similarities and differences in well-being among Latinxs and Whites. Our comprehensive well-being measure allowed us to move beyond overall comparisons and point to well-being subdomains that can be targeted for intervention or leveraged for optimizing well-being in this population. Moreover, we contribute methodological rigor and show how various approaches lead to different results, potentially contributing to mixed findings in the literature. As the Latinx population continues to grow, enhancing their health and well-being represents a key next frontier in health-related research and policy.

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INTERACTION BETWEEN SELF-EFFICACY AND PERCEIVED NEIGHBORHOOD SAFETY ON BODY MASS INDEX IN AFRICAN AMERICAN ADULTS

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African Americans have a high rate of obesity and comorbidities such as cardiovascular disease and diabetes. Social Cognitive Theory proposes that self-efficacy, or confidence in one's abilities, plays a central role in shaping self-regulation and motivation for maintaining a healthy weight. Although previous research has investigated how self-efficacy is associated with physical activity (PA) outcomes, little research has examined the extent to which broader environmental stressors interact with self-efficacy for exercise in understanding weight-related outcomes. A potential barrier to PA for underserved communities is perceived neighborhood safety. It was hypothesized that self-efficacy for exercise would moderate perceived neighborhood safety in predicting body mass index (BMI), such that those who have lower self-efficacy may be more susceptible to neighborhood supports for maintaining PA and a healthy weight. The present study used data from the Families Improving Together (FIT) for Weight Loss Trial. Self-efficacy was measured using the Eating and Exercise validated scale. Perceived neighborhood safety was measured using a validated subscale of the Neighborhood Environmental Walkability Scale (NEWS). BMI was measured by trained staff. Data from 241 African American adults ($M_{age} = 43.2, SD = 8.65; M_{BMI} = 37.5, SD = 8.34; 96\%$ female) that participated in Project FIT at baseline were analyzed. Regression analysis indicated that the model predicting BMI was significant ($F(8, 224) = 2.66, p < 0.01; R^2 = 0.09$). Furthermore, a significant interaction between self-efficacy and perceived neighborhood safety on BMI ($B = 1.09, SE = 0.51, p = 0.03$) was demonstrated. Among adults with high self-efficacy, neighborhood safety was not significantly related to BMI ($B = -0.04, SE = 0.73, p = 0.96$). However, as expected among adults with low self-efficacy, greater neighborhood safety was significantly associated with a lower BMI ($B = -2.21, SE = 0.77, p = 0.005$). These findings indicate that neighborhood safety is important for those with low confidence in their ability to be physically active for maintaining a healthy weight.

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THE RELEVANCE OF VENUE IN RESEARCH: COMPARING RECRUITMENT STRATEGIES FOR RACIAL AND ETHNIC MINORITY YMSM IN NYC

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Background: Overall, rates of new HIV diagnoses have decreased since 2010; however, rates among Latinx and Black/African American (AA) young (ages 25-34 years) men who have sex with men (YMSM) have increased. These racial and ethnic groups, however, are more difficult to engage in research and prevention services. Reasons could include the intergenerational impact of historically unethical research studies, frequent experiences of discrimination within the healthcare system, and greater rates of medical mistrust. Community outreach and field-based recruitment strategies have shown to be effective in recruiting ethnic and racial minority participants, yet few have compared community-based organizations (CBOs) to centralized, research-center-based screening for the same study. The current study compares recruitment strategies for racial and ethnic minority YMSM at high risk for HIV acquisition in NYC.

Methods: YMSM (ages 15-29 years) were recruited for a comparative effectiveness trial of a Motivational Interviewing (MI) based intervention to reduce substance use and sexual risk behavior. Two recruitment strategies were used: (1) field-based recruitment conducted by a local CBO delivering the intervention in the effectiveness trial and (2) online recruitment via ads and phone screening coordinated by the academic research partner in the effectiveness trial. Differences in demographics, substance use, sexual risk, and research participation were examined.

Results: The final sample consisted of 454 YMSM, most of whom identified as male (92.7%) and as a racial or ethnic minority (79.2%). The average age was 23.9 years old (SD=3.3). Compared to the research center, the CBO screened a significantly larger proportion of AA (odds ratio (OR)=7.28, p=.000) and Latinx individuals (OR=2.7, p=.000). CBO outreach efforts were more likely to reach youth who use injection drugs (OR=3.55, p=.000) and youth recently diagnosed with syphilis (OR=4.67, p<.01). Those screened by the CBO were also more likely to enroll in the study (OR=1.75, p<.05).

Conclusions: Current findings were consistent with existing literature on effective recruitment of racial and ethnic minorities. CBO recruitment was more efficient in reaching the most vulnerable YMSM. This may be attributable to the CBO's presence in the community and utilization of outreach workers who are members of the target population. This underscores the importance of relationship-building and personal contact in program implementation. Implementation research should routinely engage community partners in the development and execution of study recruitment strategies in a manner that can inform outreach and marketing efforts. This synergy may not only enhance recruitment efficiency but inform strategic marketing efforts.

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INFORMATION SHARING AND TARGETED CONTENT DRIVE USE OF AN ONLINE SEXUAL HEALTH INTERVENTION FOR AFRICAN AMERICAN YOUNG ADULTS

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Objective: There is increasing interest in consumer health informatics (CHI) interventions for behavior change. However, they have varying rates of access, uptake, engagement, and effectiveness with African Americans. Therefore, we examined factors influencing uptake and engagement for a CHI intervention to prevent HIV/STIs among African American young adults. The HIV Outreach, Prevention, and Education (HOPE) eIntervention included a website, blog, Facebook, and Twitter accounts paired with face-to-face, group-based educational sessions called "HOPE Parties."

Methods: This community-based participatory research study included four waves of surveys (N=315) in which participants reported their eIntervention usage after attending HOPE parties. We gathered data on usage of the eIntervention from server logs, friends/followers and user posts. Qualitative interviews were conducted with participants (N=19) after initial surveys and website server logs indicated low uptake and engagement.

Data Analysis: We assessed uptake and engagement for each eIntervention component based on usage data and survey self-report. We then conducted a generalized linear mixed-effects model on survey data to identify predictors of eIntervention uptake. Interview transcripts were analyzed using line-by-line coding by two coders and memos were developed.

Results: Participants were majority African American, female, and in their early 20s. There were significant increases in self-reported eIntervention uptake over time (increasing from N=24 users to N=44 users), but demographic and HIV/STI-related behaviors were not significantly correlated. Instead, factors driving uptake were: desire to share HIV/STI prevention information with others, and trust in the community-based organization offering the HOPE parties. Factors driving non-uptake were: lack of time, forgetting about the eIntervention, and insufficient promotion. Factors driving initial engagement were targeted website aesthetics and content that appealed to users, but longer-term engagement was impeded by insufficiently frequent content updates.

Discussion: CHI interventions for African American young adults can leverage their desires to share information about HIV/STI prevention with others. Ensuring implementation through trusted organizations is also important, though there is a need for vigorous promotion. Visual appeal and targeted content foster initial engagement, but ongoing engagement may require continual content changes.

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DO ETHNICITY AND DISEASE STAGE INTERACT IN PREDICTING QUALITY OF LIFE AND COPING CONFIDENCE IN BREAST CANCER?

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Background: Compared to non-Hispanic White (NHW) women, Hispanic women are more likely to experience reduced quality of life (QOL) following a diagnosis of breast cancer (BCa). One factor that may account for this disparity is that Hispanic women are on average diagnosed at later stages of BCa. Little is known about how ethnicity may interact with stage in predicting QOL. We hypothesized that Hispanic BCa patients at later stages of disease experience lower QOL than do NHW as a result of greater psychological and physical demands, which exceed their perceived resources and ability to cope.

Methods: Hispanic and NHW women (N=198) with newly diagnosed stage 0-III BCa in South Florida were enrolled in two randomized-controlled trials investigating different stress management interventions between 2006 and 2019. The Functional Assessment of Cancer Therapy- Breast (FACT-B) assessed QOL and the Measure of Current Status (MOCS) assessed perceived ability to cope with stressors. Stage was dichotomized as early (stages 0 and 1, $n=141$) and more advanced (stages 2 and 3, $n=57$) disease. Two-way analysis of variance examined the interaction of stage of disease and ethnicity in predicting QOL and coping confidence.

Results: Overall, 51.0% of women identified as Hispanic ($n=101$) and 49.0% identified as NHW ($n=97$). For QOL, there were significant main effects of both ethnicity ($F(1,184) = 8.03, p=.005$) and stage of disease ($F(1,184) = 9.81, p=.002$), such that Hispanic women and women at later stages of disease experienced lower QOL than NHW women and women at early stages of disease. For coping confidence, neither main effects of ethnicity ($F(1,190) = 1.32, p=.252$) nor stage of disease ($F(1,190) = 1.82, p=.179$) were significant. However, there was a significant interaction of cancer stage and ethnicity on both QOL ($F(1,184) = 4.74, p=.031$) and coping confidence ($F(1,190) = 4.11, p=.044$), indicating that Hispanic women reported larger decrements in QOL and coping confidence at later stages of disease than NHW women.

Conclusions: Hispanic women are significantly more likely to experience lower QOL and coping confidence at later stages of BCa. Providing stress management tools to Hispanic women, particularly with later stage BCa, may allow them to better cope with the increased demands of the disease and may in turn improve their QOL.

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EXAMINING DIFFERENCES BETWEEN HISPANIC AND NON-HISPANIC PARENTING ON SUBSTANCE USE BEHAVIORS IN YOUTH

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Objective: Maladaptive alcohol use and the associated negative health outcomes are major public health problems. College students are the highest risk population for maladaptive alcohol use. Parental permissiveness towards drinking has been a significant predictor of college alcohol abuse and consequences, controlling for a wide range of parent and peer influences. However, most research studying college student drinking, and associations between permissiveness and drinking, has examined samples with mainly Caucasian, non-Hispanic students. To address this gap the present study examined Hispanic ethnicity as a moderator of the association between permissiveness and college drinking outcomes using a longitudinal design. Further analyses, examined a subsample of Hispanic students to assess familismo (i.e., the importance of family on social support/identity), acculturation, and discrimination as moderators in the association between permissiveness and drinking outcomes.

Method: Students from three large and geographically diverse public universities (N=1429; 59% female; 17% Hispanic) completed measures during the fall of their first and second years. Within this sample, the Hispanic students (N=245; 73% female) were examined for the additional analyses focusing on familismo, acculturation, and discrimination. Analyses used moderated regression with bootstrapping to obtain asymmetrical 95% confidence intervals (CI).

Results: Examining the full sample, permissiveness was significantly positively associated with drinking (95% CI [0.48, 0.66]) and consequences (95% CI [0.96, 1.44]). Hispanic ethnicity significantly moderated associations between permissiveness and drinking (95% CI [-0.81, -0.43]), and permissiveness and consequences (95% CI [-1.41, -0.39]). For non-Hispanics, as permissiveness increased so did drinking and consequences. In contrast, for Hispanics the effect of permissiveness was not significantly related to drinking or consequences. The further analyses on the Hispanic subgroup revealed that discrimination significantly moderated the association between permissiveness and consequences (95% CI [0.00, 0.37]). As discrimination increased, the effect of permissiveness on consequences also increased. No other significant moderation effects were observed.

Conclusion: The research provided evidence that the positive association between permissiveness and drinking outcomes that has been widely observed in non-Hispanics was not observed for Hispanics. Within Hispanic students, as they experience more discrimination, permissiveness predicted consequences. Results emphasize the importance of examining ethnic background in studies investigating maladaptive alcohol use in college students. Ethnicity-specific contextual factors (discrimination) need to be addressed in prevention efforts.

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EVALUATION OF E.A.S.Y - A GROUP DYNAMICS-BASED HEALTHY LIFESTYLE PROGRAM FOR UNDERGRAD STUDENTS W/ ETHNIC MINORITY BACKGROUNDS

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Objective: Young adults from ethnic minority backgrounds have a higher risk and burden of chronic conditions that can be prevented and modified by a healthy lifestyle. College is a critical time within the lifespan to initiate healthier behaviors, such as increasing physical activity and fruit and vegetable intake and decreasing sugar-sweetened beverage intake. In this study, a one group, pragmatic pretest-posttest study design was used to investigate the feasibility and efficacy of a culturally sensitive, group dynamics-based intervention for ethnic minority undergrad students (EMUS).

Participants: Fifty-one EMUS were recruited from a large public university.

Methods: Participants completed baseline and post-intervention surveys. The intervention included small group GRIT™ exercise training twice a week for 8 weeks, three different educational seminars on physical activity, nutrition and self-efficacy, and activities based on group dynamics-based principles. Primary outcomes were feasibility, participant satisfaction, and physical activity and secondary outcomes were dietary behaviors. Feasibility data were analyzed by assessing the reach and adherence of the program through participation data, attendance tracking, retention, and self-report data on the level of engagement in the program. Physical activity data were analyzed using self-reported pre- and post-intervention data via the International Physical Activity Questionnaire. Dietary data were analyzed using self-report data via the Dietary Screener Questionnaire and Beverage Questionnaire-15.

Results: Participants (N = 51) were primarily female (75%), African-American (51%) or Hispanic/Latinos (41%) and underclassmen (63%; i.e., not a junior or senior). 78% of participants were retained and reported high levels of program satisfaction. No significant increase in MET-minutes from baseline to post-intervention ($p = .246$), but the change in the proportion of participants who reached the “high” levels of physical activity was significant (23% to 50%; $p = .034$). Reduction in sugar-sweetened beverages (SSB) consumption ($p = .192$) and proportion of participants consuming more than 8 fl. oz./day of SSB ($p = .66$) was not significant.

Conclusion: Results for feasibility and satisfaction of this culturally sensitive, group dynamics-based intervention were promising, but there were limitations for establishing efficacy; suggestions for future work are described. This study adds to the limited data on group-dynamics based interventions for EMUS and warrants further study with more robust study designs.

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ASSOCIATIONS BETWEEN POTENTIAL PREDICTORS AND WILLINGNESS TO TAKE PREP IN MEN WHO HAVE SEX WITH MEN

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Background: Pre Exposure Prophylaxis (PrEP), a daily medication to reduce the risk of HIV, is biologically efficacious in men who have sex with men (MSM). Delay discounting (DD) the decision to take a smaller reward immediately over a larger reward later and probability discounting (PD) the decision to take a larger uncertain reward over a smaller assured reward are distinct measures of impulsivity associated with risky behaviors. Previous research has found that a general increasing awareness of PrEP has not influenced willingness to take the medication. In the present study, we explored associations between discounting behavior (DD and PD) and willingness to take PrEP.

Methods: MSM (N = 59, ages 18-44, 72.9% white) completed an online questionnaire including demographic variables, the perceived stress scale (PSS), DD, PD, PrEP use, willingness to take PrEP, PrEP knowledge, and risky sexual behaviors. No significant correlations were found between relevant demographic variables and the independent and dependent variables of interest, and hence those variables were not included in the model. A simultaneous linear regression was used to look at multiple hypothesized predictors of PrEP willingness, specifically PSS scores, area-under-curve (AUC) for PD and DD, the HIV Sexual Risk Behavior Scale score, and accurate PrEP knowledge.

Results: The simultaneous linear regression accounted for 27% of the variance in mean PrEP interest ($\Delta R^2 = 0.27$, $F(5,53) = 3.97$, $p < 0.01$). Probability discounting ($B = 0.37$, $t = 2.99$, $p < 0.01$) and HIV Sexual Risk Behavior scores ($B = 0.27$, $t = 2.30$, $p = 0.03$) were statistically significant predictors, while delay discounting ($B = -0.01$, $t = -0.06$, $p = 0.95$), accurate PrEP knowledge ($B = 0.11$, $t = 0.94$, $p = 0.35$), and perceived stress ($B = 0.17$, $t = 1.42$, $p = 0.16$) were not statistically significant predictors.

Conclusions: In our small cross-sectional study, those who favored the larger uncertain reward were more likely to engage in risky sexual behavior, but were also more willing to take PrEP. Thus, to the extent that PD is associated with sexual risk taking, it might hold value for both identifying individuals at risk for HIV and serve as a potential intervention target. Additionally, future studies should aim to replicate findings in a larger heterogeneous sample and to understand how impulsivity might encourage PrEP initiation and benefit MSM at increased HIV risk.

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MASTERY, NOT SOCIAL SUPPORT, BUFFERS THE IMPACT OF FOOD INSECURITY ON DEPRESSIVE SYMPTOMS IN PEOPLE LIVING WITH HIV

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The HIV epidemic in the United State is heavily concentrated among members of socially and economically disenfranchised communities. For people living with HIV (PLWH) who are living in poverty, HIV disease progression may be exacerbated by a multitude of factors including food insecurity and depression. These factors have been demonstrated to directly and indirectly adversely impact HIV-related health outcomes. To better understand and intervene on the effects of poverty and depression on HIV infection, the Stress Process Model is a useful framework, particularly as it may elucidate social resources as moderating variables as targets for intervention. One psychosocial resource that has often been studied in relation to HIV is the moderating role of social support on HIV-related health outcomes. In addition, for highly impoverished PLWH a sense of mastery as a psychological resource related to personal control and self-efficacy, may also serve as a buffer in the association between poverty-related stress and depression. In the present study we sought to examine the dual processes of social support and mastery in moderating the relationship between food insecurity and depressive symptom among PLWH. Multivariate regression analyses were performed on data collected from 180 PLWH (37% women) screened for alcohol use and who were experiencing food insecurity. We constructed a regression model to test the moderating roles of social support and mastery in the relationship between food insecurity and depression while controlling for age, alcohol use and years since diagnosed with HIV. Results indicated that one third of the sample reported experiencing extreme food insecurity as indicated by experiencing recent hunger. In bivariate analyses experiencing depressive symptoms was positively associated with food insecurity ($b = 1.54$, $SE = 0.32$, $p < .001$), and independently negatively associated with both social support ($b = -0.23$, $SE = 0.07$, $p < .001$) and mastery ($b = -0.36$, $SE = 0.07$, $p < .001$). In adjusted multivariate models, mastery ($b = 0.12$, 95% CI [0.01, 0.24], $p = .04$), but not social support ($b = 0.04$, 95% CI [-0.07, 0.14], $p > .05$), was found to moderate the relationship between food insecurity and depressive symptoms suggesting that mastery serves as a buffer to depressive symptoms over and above the influence of social support among highly impoverished food insecure PLWH. The present study demonstrates the utility of including mastery enhancing components in interventions for PLWH in an effort to improve mental health and HIV-related clinical outcomes.

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THE ROLE OF RELATIONSHIP FUNCTIONING IN PREDICTING DISCUSSIONS AND UPTAKE OF PREP AMONG MEN IN SAME-SEX RELATIONSHIPS

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Gay and bisexual men (GBM) are disproportionately affected by HIV transmission risk. Among GBM, main partnerships account for the majority of new HIV infections. Pre-exposure prophylaxis (PrEP) is recommended for at risk populations, such as GBM in relationships. Previous research suggests that men in same-sex relationships are reluctant to discuss PrEP uptake with their main partner due to fear that such a discussion will undermine partner trust and threaten the relationship. The role of relationship functioning (RF) regarding discussions and uptake of PrEP among GBM in relationships has yet to be investigated but may provide valuable insight of interpersonal factors predicting individual level health outcomes.

Data were gathered from the baseline assessment of 59 seroconcordant-negative couples ($n_{\text{individuals}} = 118$) participating in a randomized controlled trial assessing the adjunct components of Couples HIV Testing and Counseling. Eligibility required both partners to be aged 18 or over, identified as cis-gender male, were sexually active and had a relationship length ≥ 3 months. At least one partner in each couple was 18-29 years old, reported drug use in the past 30 days, and was HIV-negative. Of these 118 individuals ($M_{\text{age}} = 26.55$, $SD = 4.78$) half identified as a racial minority (50%). The Multiple Determinants of Relationship Commitment Inventory scale was used to measure RF.

Results of an Actor Partner Interdependence Model (APIM) suggest significant partner effects between relationship functioning factors and discussions of PrEP with main partners. Partners with higher scores on MDRCI Rewards ($B = .049$; 95% CI: .005, .092; $p < .05$) and Comparisons ($B = .037$; 95% CI: .002, .073; $p < .05$) were significantly more likely to discuss PrEP with their main partner. Additionally, partners who reported more desire for alternatives to their current relationship on the MDRCI were more likely to be prescribed PrEP currently or in the past ($B = .069$; 95% CI: .000, .138; $p < .05$).

Contrary to the concerns expressed by many GBM, results suggest that PrEP communication is associated with better, not diminished, RF. Men who discussed PrEP with their partners had higher satisfaction and commitment compared to those who did not. Analyses provide some indication that high-functioning couples are able to tolerate PrEP communication successfully. These findings also suggest it is at least plausible that discussing biomedical HIV prevention may be linked to enhanced RF.

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BARRIERS TO PREP UPTAKE AMONG LATINO MSM: PREP STIGMA, SEXUAL SHAME, INTERNALIZED HOMONEGATIVITY AND NEGATIVE PREP PERCEPTIONS

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Background: Although Pre-Exposure Prophylaxis (PrEP) has been available as a biomedical HIV prevention strategy since 2012, specific sub-groups continue to be at high risk for HIV acquisition. While PrEP can help reduce new infections, its uptake among Latino sexual minority men (LSMM) continues to be slower when compared to other populations at risk. Furthermore, previous research has found associations between negative perceptions and PrEP-related stigma (PRS) serving as barriers to uptake. Other studies have also analyzed internalized homonegativity (IH) and sexual shame (SS) as potential factors that may influence perceptions about PrEP among MSM in general. Since research with LSMM and PrEP uptake continues to be limited, this study sought to analyze the mediating effect of PRS on the association between internalized homonegativity, sexual shame and the negative perceptions about PrEP that could hinder its uptake among LSMM.

Methods: Cross-sectional data were taken from a national sample of 1,011 LSMM from across the United States. The *Internalized Homophobia Scale* was used to measure IH and the *Sexual Pride and Sexual Shame Scale* was used to measure SS. We assessed negative perceptions about PrEP using the *Decisional Balance to PrEP Use Scale* and PrEP-related stigma using the *PrEP Stigma Scale*. Data were analyzed using path analysis on Mplus and were adjusted for demographic variables, with negative perceptions about PrEP as the outcome.

Results: Average age was 23.5 years (SD=2.9) and all participants identified as Latino. After controlling for covariates, direct effects of IH and SS on the negative perceptions about PrEP remained significant (IH: $\beta = 0.13$, $p < 0.05$; SS: $\beta = 0.17$, $p < 0.05$) as well as direct effects on PRS (IH: $\beta = 0.15$, $p < 0.05$; SS: $\beta = 0.16$, $p < 0.05$). Further, a significant direct effect was observed of PRS on the negative perceptions about PrEP (PRS: $\beta = 0.23$, $p < 0.05$). Significant indirect effects were observed from IH and SS through PRS to the negative perceptions about PrEP (IH: $\beta = 0.04$, $p < 0.05$; SS: $\beta = 0.03$, $p < 0.05$).

Conclusions: These findings support the hypothesis that PrEP-related stigma may exacerbate negative perceptions, which can serve as a barrier to PrEP uptake among LSMM. Although the association of internalized homonegativity and sexual shame with negative perceptions about PrEP was significant independent of PRS as a mediator, when PRS was added, the association continued to increase. Interventions targeting PrEP uptake among LSMM may need to address individual-level barriers associated with perception and stigma related to PrEP. Future research is also needed to understand the link between internalized homonegativity, sexual shame, and PrEP-related stigma and how other cultural factors among LSMM may influence perceptions about PrEP.

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PREP KNOWLEDGE, ATTITUDES, AND INTENTIONS AMONG BLACK COLLEGE MEN IN THE SOUTH

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Most new HIV infections occur among Black men between the ages of 17-24; 52% in the southern region of the United States (U.S.). In 2012, Pre-exposure prophylaxis (PrEP), a daily HIV infection prevention pill, was approved by the Food and Drug Administration in the U.S. and in 2018 it was approved for adolescents. PrEP use and uptake have been slow, especially among Black men, with only 1% of individuals who can benefit from this prevention tool receive it. Accordingly, this study aims to examine PrEP knowledge, attitudes, and intentions of young Black college men in the South. This study is part of a larger concurrent mixed methods study conducted in 2019 that examined the sexual health needs of Black college students enrolled at five Historically Black Colleges and Universities or Minority Serving Institutions in the South. This study includes the quantitative portion which included a 70-item online survey. Those who answered questions about PrEP were included (N=108). Students were asked about their knowledge of PrEP, attitudes of PrEP as a prevention strategy, and intentions to use PrEP if they had access. Univariate, bivariate, and multivariate analyses were conducted.

Majority of our sample had not heard of PrEP (58%), however, 64% thought PrEP was a good prevention strategy, and 63% said they would use PrEP if available. Within the past 3 months, on average, students engaged in condomless vaginal sex 6 times, condomless anal sex 2 times, and had 4 partners. In a bivariate analysis, PrEP knowledge was significantly associated with age with older students were likely to have previous knowledge of PrEP. Regarding sexual orientation, those that identified as queer (gay or lesbian, bisexual, or other) were more likely to have previous PrEP knowledge. PrEP attitudes were significantly correlated to the number of sexual partners. In regression models, condomless vaginal sex was negatively associated with PrEP use intentions. Additionally, number of partners was negatively associated with PrEP attitudes. Intentions to use protective behaviors (ie. limiting partners or using condoms) was significantly positively associated with PrEP attitudes and PrEP use intentions. This shows that Black college men consider PrEP an element to their prevention toolbox but are not being informed of PrEP and additionally may have low-risk perception. More research is needed on young Black men to understand their risk perceptions and attitudes and use intentions towards PrEP.

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INITIAL FEASIBILITY, ACCEPTABILITY AND USER EXPERIENCE OF A MULTI-DRUG POD-IVR: A MIXED METHODS STUDY

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Background: Delivering efficacious HIV/STI prevention for optimal effectiveness relies on user adherence. A dapivirine intravaginal ring (IVR) showed significant reductions in HIV incidence among adherent users. Sustained-release drug delivery devices (e.g., IVRs) are considered an important path forward to address long-term adherence.

Methods: In a pre-phase-1 trial, 10 women enrolled in serial cohorts to evaluate a pod-IVR delivering TDF-alone, TDF-FTC, and/or TDF-FTC-MVC. Six women used single and dual drug pod-IVRs; 4 used triple drug pod-IVRs – each for 7 days. Participants provided quantitative and qualitative data capturing user sensory experiences as well as acceptability, perceptibility, and adherence behaviors. The user evaluation data for each pod-IVR included sexual and reproductive health history, daily diaries, final acceptability and willingness-to-use (WTU) surveys, and qualitative in-depth interviews.

Results: We enrolled 1 Hispanic (H), 2 H White, 4 non-H White, and 3 non-H Black females. Mean age = 27.8 years (range 21-41); mean BMI = 30.8. All 10 reported they would probably/definitely recommend the pod-IVR. The majority of participants (6) reported they would probably/definitely use the pod-IVR platform for HIV prevention. However, probable use decreased with anticipated longer use times (7, 28, 90, 180 days). Confidence to insert and remove the pod-IVR was high. Users' experiences did not differ as a function of the pod-IVR delivery system itself, regardless of drug(s) delivered. Participants reported sensory and behavioral experiences that impacted their use behaviors, including insertion and removal confidence, discharge, and expulsion concerns. While experiences were not significant enough to disrupt WTU, they should be considered in developing acceptability and adherence protocols in future trials.

Conclusions: Results provide evidence that the pod-IVR device itself is well-tolerated, despite different numbers of filled pods or active drug(s). This finding holds promise both for anti-HIV pod-IVRs and, potentially, multipurpose prevention pod-IVRs that could prevent sexually transmitted infections (STIs) including HIV, and/or pregnancy. Further acceptability, perceptibility, and adherence data should continue to be explored in the context of sexual activity and menses during longer use periods (e.g., 28-day, 90-day, or 365-day ring use).

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SELF ESTEEM MODERATES THE RELATIONSHIP BETWEEN ADVERSE LIFE EVENTS AND MENTAL HEALTH DIAGNOSES FOR BLACK WOMEN LIVING WITH HIV

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Background: Black women in the U.S. are more likely to be living with HIV compared to women of other racial/ethnic groups and people living with HIV are more likely to experience adverse life events (ALE) such as physical and sexual assault. High self-esteem has proven to be a protective factor and low self-esteem has been linked to mental health diagnoses such as depressive symptoms, suicidality, and posttraumatic stress disorder (PTSD). However, the existing literature is limited in the examination of how self-esteem may buffer the relationships between ALE and mental health diagnoses among Black women living with HIV (BWLWH). Among BWLWH, we investigated whether ALE predicted mental health diagnoses and whether self-esteem was a moderating/protective factor.

Method: 119 BWLWH in an HIV epicenter in the Southeastern U.S. completed self-report assessments on self-esteem (Rosenberg Self-Esteem Scale) and ALE (Life Events Checklist for DSM-5) (e.g. rape, sexual assault, physical assault, accidents, natural disaster). Women also completed a clinical interview (via Mini-International Neuropsychiatric Inventory) to diagnose current depressive disorder, PTSD, and suicidality.

Results: SPSS was used to conduct descriptive statistics and logistic regressions. Over 85% of women experienced one or more ALE and 50.4% experienced five or more ALE. There were high rates of current PTSD (54%) and current depression (28%), but a lower rate of current suicidality (10%). Higher self-esteem predicted lower likelihood of current depression (OR=.894, p=.006), PTSD (OR=.838, p=.000), and suicidality (OR=.889, p=.019). Total ALE did not predict mental health diagnoses. However, interactions between self-esteem and total ALE significantly predicted current depression (OR=.000003, p=.011) and PTSD (OR=2.7182 x 10⁻⁹, p=.000) and tended to predict suicidality (OR=2.3261x10⁻¹¹, p=.078). Further analyses indicated that higher ALE total related to higher likelihood of current PTSD only among women reporting lower self-esteem (OR=1.21, p=.04).

Conclusion: Among BWLWH, we found that self-esteem related to lower diagnoses of depression, PTSD, and suicidality, and was a protective factor between ALE and the diagnosis of PTSD. Total ALE did not directly predict diagnoses perhaps due to a ceiling effect from the high numbers of ALE among the BWLWH. Intervention efforts addressing mental health diagnoses among BWLWH should incorporate strategies to enhance self-esteem.

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SEXUAL ORIENTATION AND IDENTITY DISCLOSURE: IMPLICATIONS FOR PREP EXPERIENCES AMONG BLACK MEN WHO HAVE SEX WITH MEN

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Background: The HIV epidemic in the United States has disproportionately burdened Black men who have sex with men (BMSM), particularly in the South. While pre-exposure prophylaxis (PrEP) has high demonstrated efficacy, uptake is low among BMSM. While we understand that stigma and health care access impacts PrEP use, health-relevant demographic characteristics have not been linked to differential uptake of PrEP. Additionally, despite great efforts in the past 5 years to make BMSM aware of and uptake PrEP, we are unsure whether or not any progress has been made.

Method: To further explore which factors are related to the abysmal uptake of PrEP among BMSM, a sample of 345 HIV-negative or unknown HIV status BMSM from Atlanta was utilized. Bivariate and multivariable logistic regression models examined the effects of sexual orientation and disclosure on PrEP awareness and use.

Results: Despite the majority of the sample reporting PrEP awareness (91%), few BMSM in our sample had ever used PrEP (10%). Bisexual BMSM experienced 0.34 (or 64% lower, 95% confidence intervals (95% CI): 0.13, 0.60) the odds of having heard of PrEP compared to their same gender loving/gay counterparts. Among all Black MSM, those who had disclosed their sexual orientations to some or all of the individuals in their networks experienced 6.7 times (95% CI: 2.28, 19.74 for out to some, 2.57, 17.42 for out to all) the odds of having heard of PrEP compared to their counterparts who had not disclosed their sexual orientation. Overall, BMSM who had disclosed their sexual orientation to some or all of the members of their networks were more aware of PrEP compared to their counterparts who reported lower levels of disclosure, but were not more likely to actually use PrEP.

Conclusions: This gap is alarming—compared to one previous 2014 study that found about 1 in 8 PrEP-aware Black MSM had used PrEP, we found with more recent data that only 1 in 9 PrEP-aware Black MSM had used PrEP. That is, we are unable to document this large gap between PrEP awareness and use has changed over the span of 5 years. This is despite concerted efforts to connect Black MSM, one of the highest risk groups for HIV acquisition, to PrEP. These findings suggest that disclosure may be a relevant characteristic to consider for PrEP awareness, but there may be more to consider in closing the awareness-uptake gap among Black MSM.

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LIFE INSTABILITY AS A PREDICTOR FOR POOR HIV-RELATED HEALTH OUTCOMES AMONG A CLINIC- BASED SAMPLE OF OLDER ADULTS

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Introduction: People with uncontrolled HIV have greater life instability, higher depressive symptoms, worse medication adherence, more recent substance use, less housing security, and are more likely to have been incarcerated (e.g. Wong et al., 2007; Wawrzyniak et al., 2016). Miami is the U.S. city with the highest prevalence of HIV in the U.S., and, like other parts of the U.S., there are growing numbers of older adults with HIV. We sought to examine the degree to which life instability affects HIV-related health behaviors and outcomes among older adults (50+) with HIV in the Miami area. We hypothesized that greater additive levels of life instability are associated with worse adherence to antiretroviral therapy, greater odds of having a detectable viral load, and lower CD4-cell counts.

Methods: From Apr 2017- Nov 2019, 622 patients (50 years +) in the primary public HIV clinic in Miami completed an interviewer-administered assessment (English or Spanish). An additive life instability index was created by incorporating eight relevant psychosocial variables: relationship status, working status, housing stability, presence of comorbid health conditions, incarceration (past 12 months), length of time residing in the US, binge drinking, and drug use. Adherence was calculated based on responses to the Wilson's 3-item scale validated against electronic drug monitoring (Wilson et al., 2016). Viral load (cut at ≥ 200 copies/mL for unsuppressed) and CD4 were extracted from electronic medical records. Linear and logistic regression models were used to assess hypothesized relationships.

Results: Overall, the mean level of life instability in the sample was moderate (range 0-6, $M = 2.81$, $SD = 1.08$). Each additional indicator of life instability endorsed, controlling for depression, was associated with: approximately 1.52 greater odds of having unsuppressed viral load, ($OR = 1.52$, 95% CI 1.23, 1.88, $p = .000$); 4.36 percentage points lower ART adherence (out of 100%) ($B = -4.36$, 95% CI 2.99, 5.73, $p = .000$), and a decrease of 32 CD4 cells per cubic millimeter ($B = -32.41$, 95% CI 14.71, 50.10, $p = .000$).

Conclusions: Findings show life instability influences ART adherence, viral load, and CD4-cell count among older adult patients with HIV in a region of the U.S. with an out of control HIV epidemic. Assisting older adults reduce life instability may help various components of the care continuum for this population, and consequently work toward end the epidemic targets.

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INCORPORATING MOBILE HEALTH TO A COGNITIVE BEHAVIOR THERAPY: ADAPTING AN INTERVENTION FOR LATINX PEOPLE LIVING WITH HIV

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Latinx in the US are disproportionately affected by HIV. Poor access to health care, delays in HIV testing and engagement in HIV care, as well as untreated mental health issues are some of the structural barriers that influence this population. Depression has long been a barrier for engagement in care and viral suppression among people living with HIV (PLWH). Interventions using Cognitive Behavioral Therapy (CBT) have been effective in successfully treating depression among PLWH. Little is known about the effectiveness of this therapy among Latinx PLWH. We explored the cultural and linguistic needs of Latinx PLWH to better develop a treatment intervention for depression using an adaptive and mobile health approach. Qualitative semi-structured in-depth interviews were conducted with participants who identified as Latinx, HIV positive, 18 years old, English or Spanish speakers receiving HIV care at the study site clinic. Participants were also assessed through a PHQ screening and received a severity score of moderate depression or higher. We asked participants about depression, HIV treatment access and acceptability of CBT adaptation. Interviews were audio-recorded and transcribed. Thematic analysis was used to analyze data. Seventeen participants, 16 men who have sex with men and one cisgender heterosexual woman, completed the interview. Participants had experienced depression for most of their lives and reported social isolation, sadness, poor concentration and difficulties with problem-solving and coping. Most previously had sought therapy and/or psychotropic treatment. Participants were receptive to the CBT intervention. Some expressed wanting a therapist that understands their background and social context and that ideally speaks their preferred language. Participants stated that they would welcome mobile health, even if they did not use it to communicate with their medical providers. They shared that receiving a text from their therapist would mean there is someone on the other end who cares about them and would reinforce the therapeutic process. Specific suggestions for texting were to use easy to read/understand messages tailored to each individual and with adaptable frequency. Concerns about confidentiality issues were few. Overall findings suggest high acceptability of CBT using a mobile health approach among interviewed Latinx PLWH. The use of texting could be a great tool to help with engagement and completion of therapy tasks.

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FORMATIVE RESEARCH AND EVALUATION OF A MOBILE ALCOHOL AND HIV PREVENTIVE INTERVENTION FOR YOUNG ADULT MEN WHO HAVE SEX WITH MEN

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Background: HIV incidence has declined in the past decade, but certain groups continue to suffer disproportionately, including men who have sex with men (MSM), young adults, and people of color. These rates are due in part to overlapping behaviors like alcohol use that negatively affect sexual health behavior. Pre-exposure prophylaxis (PrEP) can prevent HIV, but it is underused, and often with suboptimal adherence.

Method: Thus, we undertook a two-year project to develop a multi-component mobile intervention to reduce alcohol use and prevent HIV in young adult (18-30 yrs.) MSM. The intervention has 3 parts: web-based intervention providing personalized feedback; interactive voice response (IVR) system to enhance PrEP adherence via daily assessment and weekly feedback; and open-label PrEP. The intervention was developed in 3 phases: web-based survey of the Southeastern U.S. (N=682) to provide normative data for the web-based intervention; focus groups/interviews to get input from the study population (N=17); and a small usability test where participants engaged with the IVR for 30 days (N=4).

Results: The web-based survey sample was diverse, with 49% college graduates and 47% non-White. HIV risk behavior and perceived HIV risk scale scores were high. Respondents also self-reported past-month averages of > 4 sexual partners; > 4 instances of condomless sex; and almost 3 instances of alcohol before/during sex. Past-month alcohol use was moderate, with means of 9 drinking days and just over 12 drinks per week. In the past 12-months, 70% had an HIV test. Participants were PrEP-naïve, but 89% had heard of it, with favorable attitudes, including 84% perceiving PrEP to be safe. Focus group/interview participants tended to have favorable views including a belief the intervention would enhance PrEP awareness. Participants provided feedback regarding the intervention's appearance, also noting some questions were repetitive and expressed concerns about an exercise that asks participants to write about a recent sexual encounter that may have increased HIV risk. Usability participants reported the IVR was easy to use and convenient, but had critiques about clarity. Participants had a favorable view of the continuity between feedback based on the web-based intervention and IVR.

Conclusions: Participants' feedback will be used to revise the intervention to enhance its utility to reduce alcohol use and improve sexual health in groups disproportionately affected by HIV.

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INTEGRATED BEHAVIORAL HEALTH: PATIENT AND PROVIDER PERSPECTIVES FROM TWO PRIMARY CARE CLINICS

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Health care systems and providers increasingly recognize the impact of behavioral health conditions on treatment adherence, medical outcomes and costs. In response, a variety of models of providing integrated behavioral health, particularly in primary care settings, are being widely implemented. Surprisingly, few studies have examined patient and providers preferences for having behavioral health concerns addressed in primary care settings.

The purpose of this study was to: characterize patients' perceptions and preferences for integrated behavioral health services, and examine how preferences may vary by patient characteristics; and characterize providers' comfort and knowledge of behavioral health as well as time spent on patients with behavioral health needs.

Patients and primary care providers at two primary care clinics were surveyed. Patients (N=752) were asked about their beliefs and preferences for addressing behavioral health concerns. Providers (N=59) were asked about their comfort and knowledge of behavioral health as well as their perception of organizational capability to address patients' behavioral health needs.

Overall, patients reported being comfortable addressing behavioral health needs in primary care settings and considered behavioral health highly important to their overall physical health. Female gender, age, and prior treatment for mental health conditions, were each independently associated with specific preferences for addressing behavioral health concerns in primary care settings. Data pertaining to providers' comfort and knowledge of behavioral health as well as organizational capability is currently being analyzed. Preliminary results indicate that about half of providers conceptualize behavioral health as encompassing mental health, substance use, and coping with medical conditions. Providers also indicate that 10 to 30% of their daily time is spent on behavioral health. Further analyses will explore differences by study site, as well as longitudinal changes following the integration of services.

This study starts to address a gap in knowledge with regards to patient and providers preferences for addressing behavioral health concerns in primary care settings. Additional research is needed to examine individual and structural characteristics that may affect the success of efforts to integrate behavioral health services into primary care settings.

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NEXT STEPS TO INTEGRATING BEHAVIORAL HEALTH: ACCEPTABILITY AND FEASIBILITY OF A HEALTH BEHAVIOR CHANGE PROGRAM IN PRIMARY CARE

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Integrating behavioral health into primary care settings offers an opportunity to prevent and treat chronic illness through health behavior change. Group interventions may efficiently engage multiple people in medical settings. However, the real-world experiences and logistical difficulties patients and providers experience integrating group interventions into primary care are largely unknown. The current study tested the feasibility and acceptability of a group-based, multicomponent, health behavior change program in a primary care setting. Recruitment for the program was rolling over the course of 8 months with sessions offered every week, but on alternating days/times. Of the patients who enrolled in the study (N=22), 13 attended at least one session (M=3.78 sessions) and completed 5- and 10-week follow-up surveys assessing their satisfaction with the group and barriers to attending. Overall, patients rated the program as satisfactory. They appreciated the rolling recruitment and frequency of sessions offered; however, they reported logistical barriers to attendance (i.e., transportation and time). Regarding intervention components, patients preferred concrete guided meditations, given that mindfulness was new to many patients, and they preferred walking, strength training, and yoga to other forms of physical activity. Health care providers who practiced in the clinic where the intervention took place were also surveyed at study completion; 21 of the 56 providers (37.5%) responded and shared their satisfaction, referral rate, and perceived integration of the program into their practice. Health care providers reported they were less satisfied with the referral process and integration of the program. Seven providers (33.3%) responded that they never referred a patient to the group, or at most, patients were referred 2-3 times per month. Providers offered several suggestions for improving integration: with notable caveats. The use of motivational techniques during recruitment as well as ways to increase provider participation are needed to improve feasibility. Results from this study will better inform health care providers and researchers who are working to address dissemination and implementation of health behavior change programs in primary care settings.

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USING TECHNOLOGY TO IMPROVE IDENTIFICATION AND MANAGEMENT OF ADOLESCENT SUBSTANCE USE IN PEDIATRIC PRIMARY CARE

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Background: Adolescent substance use is often under-identified and undetected, leading to increased risk for development of substance use disorders. Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a widely recommended approach to early detection and intervention, but uptake has been slow in pediatric primary care (PPC) settings. Reasons may include provider discomfort discussing stigmatizing topics with youth, time constraints, and limited knowledge and self-efficacy in addressing adolescent substance use.

Objective: To understand how technologies including digital health (e.g., tablets, cell phones) and electronic medical records (EMR) can facilitate implementation of SBIRT in PPC settings serving vulnerable youth.

Methods: Qualitative semi-structured interviews were conducted with a convenience sample of 12 clinic staff members (pediatricians, nurse practitioners, and behavioral health clinicians) from a safety-net PPC clinic in San Francisco. Participants discussed challenges to screening and addressing adolescent substance use, and perspectives on how technology could help overcome these challenges. Coded interview transcripts were analyzed inductively to ascertain themes.

Results: The most frequently reported challenges were a lack of time to screen for substance use problems during adolescent well-care visits and limited knowledge regarding what to do for youth who screen positive. Technology-based solutions to overcoming these challenges included: (1) Using mobile phone or tablets to administer screeners and educational information about substance use to adolescents prior to their visit; (2) Integrating screening results into the EMR so that they are available at the point of care; (3) Having an EMR-based decision support tool that accurately determines the appropriate level of intervention based on screening results; and (4) Providing up-to-date information on local referral resources in the EMR or other Web-based systems.

Conclusions: Findings support the potential suitability and potential benefits of using technology to facilitate SBIRT implementation in PPCs serving vulnerable youth.

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TREATMENT OF PATIENTS WITH CHRONIC PAIN AT RISK FOR SUICIDE: ROOM FOR INNOVATIVE APPROACHES

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Background: People with chronic pain (PWCP) are at least twice as likely to die by suicide than the general population (Racine, 2018). Existing suicide prevention efforts have focused on screening and referring these individuals to mental health to ensure that this high-risk population receive suicide prevention (SP) treatment. However, only about 5% of PWCPs follow-up on referrals (Edmond, Moore, Dorflinger et al., 2018). Further, PWCP who die by suicide are more likely to see a primary care provider (PCP; 75%) than mental health provider (MHP; 30%) in the past year (Edmond, Moore, Dorflinger et al., 2018, Luoma, Martin & Pearson, 2002), suggesting opportunities to deliver SP treatments in medical settings for this high-risk population. The goal of this study was to understand where and from whom PWCPs at risk for suicide want to receive SP treatments.

Methods: We conducted a national survey of 1090 PWCPs who were feeling hopeless. We asked about their suicidal thoughts and behaviors in their lifetime and in the past year. Additionally, we asked where and from whom they would be interested in receiving treatments for their hopelessness.

Results: PWCPs who were feeling hopeless (n=1090) were most interested in receiving treatment in a mental health setting (71%), a primary care setting (68%), and remotely by computer or app (67%). These individuals are interested in receiving treatment from a mental health (74%) or medical (69%) provider. Those at highest risk for suicide (i.e., previous attempt(s); n=92) were more likely to be interested in receiving treatment in a mental health setting (75%) than those at moderate risk (i.e., suicidal ideation but no prior attempts; n=284; 67%). Higher risk and moderate risk individuals were equally likely to be interested in receiving treatment in a primary care setting (68%, & 69%) or remotely via computer or app (67%, & 66%).

Conclusions: Overall, PWCPs at risk for suicide are most interested in receiving treatments in primary care. They are open to receiving this treatment from either mental health or medical providers. A small proportion of this population at highest risk for suicide are open to receiving treatment in mental health. These findings suggest opportunities to continue to screen and refer, but also to integrate SP treatment into medical settings to reduce suicide risk for this high-risk population. Future research should develop and test integrative approaches to addressing suicidality among PWCPs.

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EXPLORING ILLNESS PERCEPTION AND ITS ASSOCIATION WITH DEPRESSION SYMPTOMS IN A DIVERSE SAMPLE OF PEOPLE WITH EPILEPSY

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Background: Epilepsy has been linked to negative mental health outcomes, including depression. The Common Sense Model of Self-Regulation purports that coping with chronic illness is shaped by illness perceptions, which in turn influences emotional outcomes. We explore illness perceptions and their association with depression symptoms in a diverse sample of people with epilepsy (PWE).

Methods: Sixty PWE (*M* Age = 41.8; 61.7% female; 78% Black/African or Caribbean American) completed self-report measures of epilepsy illness perceptions (IPQ-R) and depression (BDI-II, NDDIE). Average illness duration was 20.8 years (*SD* = 14.5).

Results: Approximately one-fourth of participants met criteria for moderate to severe depression on the BDI-II (25.0%; *M* = 11.8, *SD* = 9.5) and were above the cut-off on the NDDIE (26.7%; *M* = 11.7, *SD* = 3.5). When asked to rate potential causes of their illness, participants indicated stress/worry, family problems/worries, and one's own emotional state as the three most important causes, i.e., those with the highest means. T-tests revealed that participants who met criteria for moderate to severe depression on the BDI-II more strongly endorsed these causes, compared to participants who endorsed minimal to mild symptoms ($p < 0.01$). Similarly, participants who were above the NDDIE cut-off more strongly endorsed stress/worry ($p < 0.05$) and family problems/worries ($p < 0.01$) as causes, compared to those below the NDDIE cut-off. Negative emotional representations of epilepsy significantly correlated with beliefs that epilepsy is chronic ($r = 0.40$, $p < 0.01$) and has negative consequences ($r = 0.44$, $p < 0.01$), and that epilepsy is hard to comprehend ($r = 0.49$, $p < 0.01$). Multiple regression analyses indicated that these illness perceptions predicted higher levels of depression symptoms on the BDI-II ($p < 0.01$, $R^2 = 0.26$) and the NDDIE ($p < 0.01$, $R^2 = 0.25$).

Discussion: Self-reported depression symptoms were prevalent in this diverse sample of PWE and were significantly associated with negative illness perceptions. Behavioral interventions promoting a better understanding about epilepsy and that take patients' illness-related beliefs into account may help individuals challenge ineffective perceptions and improve psychological outcomes.

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ACCREDITED SOCIAL HEALTH ACTIVIST (ASHA) SUPPORT AND ANTENATAL ANXIETY AMONG PREGNANT WOMEN IN MYSORE, INDIA

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Background: In India, antenatal depression and anxiety prevalence estimates range from 6% to 48% and a recent national mental health survey reported a treatment gap of 85% across the country for common mental health disorders. Social support has been found to be strongly associated with mental wellbeing. However, most studies in the country have examined the impact of support from partners and family members rather than peers, community members, or health care providers. Understanding the impact of non-family member support, particularly from Accredited Social Health Activists (ASHA), has the potential to inform the development of future interventions for antenatal depression and anxiety.

Methods: Cross-sectional data were analyzed from the Saving Children, Improving Lives project, a quasi-experimental study conducted among rural, pregnant women in the Mysore district of Karnataka, India from 2011-2014. Generalized linear models with a log link and binomial distribution were used to estimate adjusted risk ratios (aRRs) and corresponding 95% confidence intervals for the relationship between ASHA social support and antenatal anxiety. Antenatal anxiety was measured using a subscale of the Edinburgh Postnatal Depression Scale.

Results: The sample consisted of 480 pregnant women who were primarily in their second trimester (52%) and experiencing their first pregnancy (65%). Reported antenatal anxiety prevalence was 27% (95% CI: 0.23, 0.31). Participants who were more frequently visited by ASHAs at home (aRR: 0.90; 95% CI: 0.76, 0.98) and participants who were more frequently accompanied by ASHAs to their antenatal care visits (aRR: 0.86, 95% CI: 0.78, 0.95) were less likely to report antenatal anxiety. Effect modification results suggest that ASHA home visits were protective for the most vulnerable women (primigravida and those experiencing husband or husband's family perpetrated intimate partner violence) and ASHA accompaniment to antenatal care visits were equally protective for all women.

Conclusions: ASHAs are valued for their contribution towards maternal health education and linking women of reproductive age and their children to health-care services. Our findings additionally suggest the important role ASHAs play in providing psychosocial support to pregnant women, particularly those who are most vulnerable to experiencing antenatal anxiety.

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EXAMINING DIFFERENCES IN ANXIETY SENSITIVITY AND EMOTION REGULATION AMONG ADULTS WITH ASTHMA AND COPD

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Introduction: Anxiety sensitivity and difficulties with emotion regulation are common risk factors for anxiety and depression which have been linked with worse respiratory symptom control among patients with COPD and asthma. Patients with asthma and patients with COPD often experience similar respiratory symptoms (e.g., dyspnea, acute symptom exacerbations) and have similar treatment regimens. However, to date no studies have compared anxiety sensitivity and difficulties with emotion regulation among adults with asthma, COPD, or comorbid asthma and COPD.

Methods: Respondents were recruited from a large national online panel of adults with chronic respiratory conditions. The sample included adults with current asthma ($n = 230$), COPD ($n = 321$), or comorbid asthma and COPD ($n = 217$). Anxiety sensitivity was measured using the Anxiety Sensitivity Index-3. Emotion regulation was measured using the 36-item Difficulties with Emotion Regulation Scale. Differences in ASI-3 and DERS scores were tested using one-way Welch ANOVAs. Games-Howell post-hoc tests were used to compare mean ASI-3 and DERS scores among respiratory conditions.

Results: There were significant differences in ASI-3 ($F[2, 716] = 17.28, p < .001$) and DERS ($F[2, 716] = 12.37, p < .001$) scores among respiratory conditions. Compared to adults with COPD only, ASI-3 scores were significantly higher among adults with asthma only ($M_{diff} = 9.36, SE = 2.38, p < .001$) and with comorbid asthma and COPD ($M_{diff} = 9.98, SE = 2.42, p < .001$). ASI-3 scores did not differ significantly between adults with asthma vs. comorbid asthma and COPD ($M_{diff} = -0.63, SE = 2.82, p = .973$). Similarly, compared to adults with COPD only, DERS scores were significantly higher among adults with asthma only ($M_{diff} = 5.94, SE = 1.47, p < .001$) and among adults with comorbid asthma and COPD ($M_{diff} = -8.53, SE = 1.60, p < .001$). ASI-3 scores did not differ significantly between adults with asthma vs. adult with comorbid asthma and COPD ($M_{diff} = -2.59, SE = 1.80, p = .332$).

Conclusion: Asthma is uniquely associated with heightened anxiety sensitivity and greater difficulties with emotion regulation compared to COPD. Comorbid COPD is not associated with greater anxiety sensitivity or difficulties with emotion regulation among adults with asthma. Adults with asthma have higher levels of these common, treatable, psychological vulnerabilities which may place them at greater risk for mental health conditions and associated negative respiratory disease related outcomes.

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USE OF THE PHQ-9 TO PREDICT RECOVERY OF FUNCTIONAL INDEPENDENCE DURING ACUTE REHABILITATION, POST-SCI

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Background: Depression disproportionately impacts individuals living with spinal cord injury (SCI) and has been associated with many adverse functional outcomes. Accordingly, it is crucial that healthcare providers possess the necessary tools to accurately identify depression in this population. Findings from previous studies have failed to fully support the unidimensionality of a commonly used depression measure (i.e., Patient Health Questionnaire-9; PHQ-9) within the SCI population. Rather, factor analytic findings have more robustly supported the existence of oblique somatic and non-somatic factors, with scores on the non-somatic factor, but not the somatic factor, during acute rehabilitation predicting long-term psychosocial outcomes after SCI.

Method: In this study, we examined the association between PHQ-9 derived variables (i.e., total score, somatic factor, non-somatic factor) and rehabilitation gains (i.e., Functional Independence Measure [FIM] Motor Gain) made by a sample of 32 adults living with SCI during acute rehabilitation. Salient covariates were controlled for across statistical analyses (i.e., length of stay, race, sex, age, neurologic level of injury).

Results: Results of linear regression indicated that the initial model containing PHQ-9 total score did not yield a significant effect on FIM Motor Gain ($F = 1.97, p > .05$). In a subsequent model, we examined the effects of the PHQ-9 somatic and non-somatic subfactors on FIM Motor Gain. Results of this latter analysis indicated that the overall model significantly predicted FIM Motor Gain ($F = 2.67, p < .05$), with scores on the PHQ-9 somatic factor ($\beta = -0.35, p < .05$), but not the non-somatic factor ($\beta = .25, p > .05$), significantly contributing to overall model fit.

Conclusion: Greater endorsement of somatic distress, but not non-somatic distress, on the PHQ-9 by individuals living with SCI during participation in acute rehabilitation was associated with diminished recovery of functional independence by time of discharge. The disparate impact of these two factors on FIM Motor Gain lends additional support for the two-factor conceptualization of distress captured by the PHQ-9 within this clinical population.

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CLINICIAN REPORTED CHALLENGES IN THE CREATION OF ACTION PLANS

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Background: A critical component of evidence-based behavioral treatment for mental health problems is the creation of action plans that clients implement between sessions. Implementation of these plans is closely tied to clinical outcomes. However, adherence to action plans is poor. Researchers suspect it can be due to the clinician's skill in collaboratively creating action plans and in using complex treatments.

Purpose: Human Centered Design (HCD) has the potential to address challenges clinicians face through identifying usability problems of an intervention. In this preliminary study, we employed HCD to understand clinician challenges in delivering the treatment steps for creating action plans.

Methods: We interviewed 7 certified clinicians about their experiences delivering Problem Solving Therapy and Engage treatments to clients with late life depression. Both treatments include identifying a problem and goal, and creating an action plan to meet that goal. The clinicians participated in a randomized trial evaluating their use of these treatments. To inform the interview, we drew insights from 8 therapy recordings of 5 clinicians in the trial. We identified emerging themes through qualitative coding.

Results: Clinician challenges vary with different clients. Identifying and scoping problems and goals was difficult when clients experienced complex or poorly specified problems, for which a solution was hard to anticipate, such as relationship issues. When generating alternative solutions and assessing their feasibility, clinicians were heavily involved in assisting some clients. This made clinicians tired, and concerned about patronizing clients when offering their own ideas. Generating the week's activity plan was seen as easier, because the client was able to lead this step. Clinicians were hopeful about client progress and anticipated reviewing the activity plan in the next session, but were frustrated when clients repeatedly did not complete plans. Additional challenges include the cognitive burden of delivering structured treatments, such as boredom, and poor interactions with clients.

Conclusion: This study is the first step in potentially redesigning behavioral treatment to better support implementation of action plans. Results suggest that therapists need more support in addressing complex or seemingly unsolvable problems. Additionally, the structured approach to action plans may need to be loosened to reduce implementation burdens.

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EMOTION REGULATION AND ANXIETY SENSITIVITY AMONG ADULTS WITH ASTHMA AND COPD: LINKS WITH SYMPTOMS AND ACUTE MEDICAL SERVICE USE

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Introduction: Individuals with chronic respiratory conditions (i.e., asthma and COPD) have higher risk of mental health conditions such as depression and anxiety. Patients with depression and anxiety often experience heightened anxiety sensitivity and greater difficulties with emotion regulation. Among adults with chronic respiratory disease, anxiety sensitivity and emotion dysregulation have been linked with poorer respiratory symptom control. The purpose of this study was to examine the associations of emotion regulation and anxiety sensitivity with frequency of acute symptom exacerbations and use of acute medical care (e.g., ER visits and hospitalizations) among adults with chronic respiratory conditions.

Methods: We surveyed 710 adults with asthma and/or COPD recruited from a large national web-based panel of adults with chronic respiratory disease. Predictors included: emotion regulation, measured using the Difficulties in Emotion Regulation Scale (DERS); and anxiety sensitivity, measured using the Anxiety Sensitivity Index-3 (ASI-3). Dependent variables included self-reported frequency of acute respiratory exacerbations, emergency department (ER) visits, and hospitalizations during the prior 12-months. Logistic regression models were used to test the relationship of DERS and ASI-3 scores with each outcome, controlling for respondents' current depression and anxiety symptoms (measured using the Patient Health Questionnaire 4), current smoking status, and primary care use in the past 12-months.

Results: Each ten-point increase in DERS score (range: 36 to 180) was associated with an approximately 20% increase in likelihood of an acute symptom exacerbation (AOR=1.19, 95%CI: [1.12, 1.28], $p < .001$), ER visit (AOR=1.20, 95%CI: [1.11, 1.29], $p < .001$), or hospitalization (AOR=1.18, 95%CI: [1.08, 1.28], $p < .001$) during the prior 12-months. Each ten-point increase in ASI-3 score (range: 0 to 72) was associated with a 62% increase in the odds of an acute symptom exacerbation (AOR=1.62, 95%CI: [1.43, 1.83], $p < .001$) 47% increase in the odds of an ER visit (AOR=1.47, 95%CI: [1.31, 1.66], $p < .001$) and 41% increase in odds of hospitalization (AOR=1.41, 95%CI: [1.23, 1.60], $p < .001$) during the prior 12-months.

Conclusion: Greater difficulties with emotion regulation and higher anxiety sensitivity are strongly associated with the greater odds of acute symptom exacerbation and costly acute medical care use among adults with chronic respiratory disease, above and beyond variance attributable of depression, anxiety, smoking, and primary care use. Existing evidenced based interventions for reducing anxiety sensitivity and improving emotion regulation may help to improve symptom control and reduce use of acute medical service among patients with chronic respiratory conditions.

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GENERATIVITY AS MEDIATOR IN THE RELATIONSHIP BETWEEN GAY COMMUNITY ATTACHMENT AND REDUCED DEPRESSION AMONG GAY AND BISEXUAL MEN

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Generativity as mediator in the relationship between gay community attachment and reduced depression among gay and bisexual men

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Background: Generativity has been shown to positively impact mental health and overall well-being. This construct is often examined in the context of parenting and embeddedness in conventional family structures. Some qualitative research on sexual and gender minority populations has instead linked generativity to other forms of social and community attachment. We examined quantitative data on generativity, gay community attachment, and depression to test for significant associations among these factors in a population of sexual minority men (SMM).

Methods: We administered measures of demographics, the Loyola Generativity Scale (LGS), the Gay Community Attachment (GCA) Scale and the CES-D, a measure of depressive symptoms to 10,663 SMM. We ran a series of Pearson correlations to determine which demographic factors were significantly associated with the LGS and CES-D. We then ran a series of regressions adjusting for these potential confounding factors, to test a mediation model wherein generativity mediates the relationship between gay community attachment and scores on the CES-D.

Results: Age, race/ethnicity, employment, income, educational attainment, and sexual identity were correlated with CES-D scores. Being older, non-white, employed, having higher income, a college degree, and raising a child were associated with higher generativity. Higher GCA ($\beta = -0.22, p < 0.00$) and generativity ($\beta = -0.46, p < 0.00$) were independently associated with lower depression. GCA also predicted generativity ($\beta = 0.30, p < 0.00$). In a combined model, both GCA ($\beta = -0.09, p < 0.00$) and generativity ($\beta = -0.44, p < 0.00$) predicted lower depression; however the effect of GCA decreased from the single-factor model. The model supports partial mediation of the relationship between GCA and depression through generativity.

Conclusions: Gay community attachment and generativity are important factors affecting mental health in GBM. Evidence of generativity mediating the relationship between GCA and depression supports the hypothesis that attachment to the community may be central to attainment of generativity among GBM and the connection between GCA and generativity partially accounts for the positive effect of GCA on mental health in this population.

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PRENATAL INTERVENTION REDUCES POSTPARTUM DEPRESSIVE SYMPTOMS FOR WOMEN WITH OVERWEIGHT BUT NOT OBESITY

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Pre-pregnancy overweight/obesity and high gestational weight gain (GWG) are recognized risk factors for postpartum depression. However, research examining the impact of prenatal behavioral interventions on postpartum depression is scant. The purpose of this exploratory secondary analysis was to examine whether women differed in postpartum depressive symptoms by GWG intervention assignment (intervention vs. control) and weight status (overweight vs. obese). Pregnant women with overweight or obesity (N=31) participated in Healthy Mom Zone, an individually-tailored, adaptive intervention to regulate GWG. Women were randomized to an intervention (n=15) or control group (n=16) from ~9-36 weeks gestation. Women completed the Edinburgh Postnatal Depression Scale at the 6-week postpartum study visit to assess postpartum depressive symptoms (PDS). Available data during postpartum reduced the sample to N=21 (n=10 intervention, overweight=7, obese=3; n=11 control, overweight=5, obese=6). A 2 X 2 factorial design was used to examine main effects and interactions in 6-week PDS by intervention assignment and weight status groups. Monthly prenatal depressive symptoms were included as a covariate; significance was set at $p < 0.10$ as appropriate for exploratory analyses. The main effect for intervention assignment [intervention (Mean=6.1) vs. control (Mean=7.1)] on 6-week PDS was not significant ($p > 0.10$). There was a main effect for weight status such that women with overweight (Mean=4.78) had lower 6-week PDS compared to women with obesity (Mean=8.37; $p=0.09$). There was an interaction ($p=0.09$) between intervention assignment and weight status such that for women with overweight, intervention women (Mean=2.6) had lower 6-week PDS compared to control women (Mean=6.9). There was no significant effect for women with obesity. These exploratory findings suggest that an individually-tailored, adaptive intervention aiming to regulate GWG may protect against PDS among women with overweight. Future research is needed to replicate these findings and further understand why similar effects were not observed among women with obesity.

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RELIGIOSITY EFFECTS ON SUICIDE RATES AND ATTITUDES TOWARD SUICIDE: A LARGE-SCALE INTERNATIONAL ANALYSIS

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Each year, more than 800000 people of all ages commit suicide, accounting for 56% of all world violent deaths. This is a global tragedy, higher in figures than the mortality caused by war and homicides. The majority of all suicides (75%) occur in low and middle-income countries (WHO, 2014). Suicide is a complex phenomenon, the explanation of which brings together social and cultural factors as well as individual and environmental elements. In a cohort of 74399 participants from 47 countries, this study examined suicide rates and attitudes towards suicide considering five indicators for religiosity (Value of God, Value of Religion, Religious self-description, Prayer frequency, and Frequency of attendance to religious services), subjective well-being (Happiness, Health perception and Freedom of choice and control over own life) and sociodemographic and environmental variables (Rural population, Unemployment, Human Development Index (HDI), Education, Social class, Incomes and Hours of sunshine per year). We extracted data from the Wave-6 (2011-2014) data set of the World Values Survey (Inglehart et al., 2014); the Global Health Observatory data repository (2018); United Nations Development program (2018); the World Meteorological Organization (2018); the World Bank (2018); and the International Labour Organization (2018) data bank. Suicide rate correlated with: Value of God ($r=-.67, p<.001$), Value of Religion ($r=-.58, p<.001$), Prayer frequency ($r=-.47, p<.01$), HDI ($r=.450, p<.01$), Sunshine ($r=-.43, p<.01$), Religious self-description ($r=-.43, p<.01$), Attitude towards suicide ($r=.41, p<.01$), and Attendance to religious services ($r=-.359, p<.05$). Attitude towards suicide correlated with: Value of God ($r=-.65, p<.001$), Value of Religion ($r=-.57, p<.001$), HDI ($r=.51, p<.001$), Religious self-description ($r=-.45, p<.01$), Prayer frequency ($r=-.42, p<.01$), Suicide rate ($r=.41, p<.01$), Rural population ($r=-.38, p<.01$), and Attendance to religious services ($r=-.28, p<.05$). In multiple regression analyses, Value of God ($b=-.59, p<.001$) was the only predictor for suicide rates, explaining 35.1% of the variance. For attitude towards suicide, Value of God ($b=-.68, p<.001$) as well as Subjective state of health ($b=-.31, p<.01$) were found as predictors, explaining together 47% of the variance. The findings open again the paradox of high rates of suicide in modern societies and emphasize the importance of considering religiosity in prevention and attention programs to suicidal behavior.

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PERCEPTIONS OF TELEHEALTH USE AMONG UNDERSERVED ADOLESCENTS AND YOUNG ADULTS

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Background: One in five youth ages 12 – 18 lives with significant mental health challenges. Half of the adult diagnosable mental health conditions are symptomatic by age 14 and 75% by age 24. However, less than 20% receive mental health services. Technology provides the opportunity to increase access to healthcare by using interactive videoconferencing that allows clinicians and patients to connect in different locations.

Objective: To assess the perceptions of underserved minority young people (ages 13-24) regarding the use of telehealth as an avenue to address mental health needs.

Methods: Six focus groups were conducted as part of a needs assessment to inform the development of a pilot mental health telehealth training program to addresses the clinical training needs of psychiatric mental health nurse practitioner (PMHNP) students; and identify the mental health needs of underserved minorities in Los Angeles County (LAC) and Orange County (OC). Eligibility criteria included: 1) Hispanic/Latino or other underserved minority population as identified by partner organizations; 2) 13-25 years old; and, 3) resident of LAC or OC. Additionally, participants were required to have enough English communication to understand and complete the survey and focus group activities. A total of 59 people between the ages of 13 and 23 from LAC or OC participated in the focus groups.

Results: A little less than half of the participants (47%) reported being confident/very confident in using a telephone or computer for two-way health services, 25% reported not confident/not confident at all, and 27% reported being neutral. Overall, there were mixed feelings among all participants about their level of comfort in using technology to talk to someone for mental health related issues. While some participants acknowledged the value in using technology, many mentioned issues of distrust, privacy, and security in addition to the loss of empathy and personal connection with the mental health practitioner.

Conclusion: Although the use of technology was hypothesized as a viable tool to reach underserved minority youth and young adults to address the shortage of mental health services, challenges lie ahead to address the issues of privacy and trust with the use of technology. In addition, a hybrid approach (in-person/telehealth) may be necessary to allow participants and mental health practitioners to build trust and address the perceptions of loss of personal relationship and empathy.

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PROMOTING ATTACHMENT SECURITY AND BIOPSYCHOSOCIAL OUTCOMES THROUGH EMOTIONALLY-FOCUSED MENTORING

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Our early life experiences give rise to attachment orientations—ways of thinking, feeling, and relating to others (Bowlby, 1969). Ranking high on attachment insecurity is characterized by emotional instability and maladaptive behavioral patterns. Attachment insecurity is a transdiagnostic marker of risk that leaves people vulnerable to experience adverse mental, social, and physical health outcomes (Ein-Dor, Viglin, & Doron, 2016). Attachment theory is an established framework of human development that identifies *emotion dysregulation* as the root cause of this distress. Approximately 30-40% of people are insecurely attached; however, many psychological interventions don't focus on enhancing attachment security. Based on the NIH Stage Model of Intervention Development, the current proposal fills this gap by using feasibility and acceptability data to pilot test a novel intervention program, called Emotionally-Focused Mentoring (EFM). EFM targets emotion regulation capacities in insecurely attached adolescents (N = 60) using a creative attachment-based approach. This innovative program provides mentees (i.e., insecurely attached first-year college students) with a warm and trained mentor (i.e., a securely attached upperclassmen trained in basic principles of Emotionally-Focused Therapy) for five weeks. Mentorship begins during the stressful transition to college with the aim of enhancing adaptive emotion regulation strategies and attachment security during this high-risk developmental window of time. To track change over time, mentees will provide self-report data on three occasions over the course of 5 weeks to assess changes in emotion regulation skills, mental health outcomes (i.e., loneliness, depression, anxiety) and health behaviors (i.e., alcohol consumption, cigarette smoking). Multilevel modeling will be used to assess how changes in emotion regulation, mental health outcomes, and health behaviors are associated with one another. By pilot testing Emotionally Focused Mentoring, I hope to create a low-cost and sustainable way to improve emotion regulatory capacities, attachment security, and biopsychosocial outcomes for at-risk adolescents.

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HOW DO SUBJECTIVE HEALTH LITERACY MEASURES WORK IN YOUNG ADULTS? SPECIFYING “ONLINE” OR “PAPER-BASED” FORMS IMPACTS RESULTS

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Purpose: Health literacy refers to the ability to access, understand and use information to make health decisions. Measuring health literacy is challenging; there is no gold standard measure. The Single Item Literacy Screener (SILS) and Subjective Literacy Screener (SLS) ask people to self-report ability to understand health information and complete medical forms. However, they were developed over 10 years ago, before common use of electronic health records and forms. This study explored how well the SILS and SLS perform among young adults and whether specifying “online” or “paper-based” wording impacted measure performance.

Methods: Participants were recruited from an online survey company. Eligible individuals (18-35, English speaking, US residents) were randomized to: 1) original SILS and SLS, 2) modified SILS and SLS, adding “paper-based” to describe health information and forms; or 3) modified SILS and SLS, adding “online” to describe health information and forms. We examined how these measures related to validated measures including: e-Health Literacy scale (eHEALS), subjective numeracy scale (SNS), objective numeracy scale (ONS), and knowledge after reading a short passage.

Results: 1342 participants were recruited; 848 correctly responded to attention checks and were retained in analyses. Mean age was 26; 66.4% were white, 14.3% were black, 19.3% were another or mixed race. Most (61.7%) had at least 1 health condition. The original SILS performed reasonably, relating to knowledge (p=0.003), eHEALS (p=0.04) and ONS (p< 0.001) but not SNS (p=0.44). When adding “paper-based,” though, SILS did not relate to either knowledge (p=0.25) or SNS (p=0.35). When adding “online,” SILS better differentiated between adequate and limited health literacy, relating to knowledge (p< 0.001), eHEALS (p< 0.001), ONS (p=0.002) and SNS (p=0.03). The original SLS performed well and related to knowledge (p< 0.001), eHEALS (p< 0.001), ONS (p< 0.001), and SNS (p< 0.001). When adding “paper-based,” though, the SLS related to knowledge (p=0.03) and eHEALS (p< 0.001) but not ONS (p=0.13) or SNS (p=0.33). When adding “online,” the SLS related to knowledge (p< 0.001), eHEALS (p< 0.001) SNS (p=0.03) but not ONS (p=0.06).

Conclusion: Young adults might interpret subjective health literacy measures differently when prompted to think about electronic or paper-based information and forms. Researchers should consider clearer instructions or modified wording when using these measures in this population

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PERCEIVED MENTAL FATIGUE: MEASUREMENT VALIDATION IN TWO STUDIES OF ADULTS WITH CHRONIC COGNITIVE COMPLAINTS

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Mental fatigue may be defined by cognitive “slowness” or actual impaired performance as a function of cognitive load (degree of personal and/or situational stress). Mullen and colleagues (2019) developed a novel, unidimensional *Perceived Mental Fatigue Questionnaire* (PMFQ; 7-item Likert scale, e.g., “My thinking requires effort,” 1 = Not at all to 5 = Very true) which has shown strong psychometric attributes. The purpose of this study was to validate the PMFQ in two samples experiencing fatigue and cognitive complaints, namely breast cancer survivors (BCS) and individuals with post-concussion symptoms (PCS). Each sample participated in a feasibility study of aerobic exercise training paired with either mindful relaxation (study 1: BCS) or cognitive stimulation (study 2: PCS) relative to unimodal interventions. A battery of established psychosocial questionnaires assessing fatigue, mindfulness, anxiety, depression, memory, and the PMFQ was administered at multiple time points during the 1-week BCS study and 1-month PCS study. Data herein were collapsed across groups for all analyses. In study 1, the total PMFQ score was significantly ($p < .05$) positively correlated with the *Brief Fatigue Inventory* at baseline ($r = .58$) and the *Piper Fatigue Scale* at session 1 through 3 at pre-intervention (r 's = .63, .77, .73) and post-intervention (r 's = .50, .74, .59), as well the *Activation Deactivation Adjective Checklist* subscales at pre-intervention (range of correlations: *tired* = -.57 to -.44; *energy* = -.55 to -.29) and post-session (r range: *tired* = -.55 to -.42; *energy* = -.50 to -.24). PMFQ was also positively associated with *Frequency of Forgetfulness* total score ($r = .44$) at baseline. One-week test-retest reliability = .58. In study 2, PMFQ negatively correlated with the *Mindfulness Attention and Awareness Scale* at baseline ($r = -.57$) and 1-month follow-up ($r = -.46$). Baseline and follow-up PMFQ correlations with *Hospitalized Anxiety and Depression Scale* were also consistent for depression ($r = .53, .56$), but less so for anxiety ($r = .28, .53$). Two of three subscales of the *Multifactorial Memory Scale* were negatively correlated with PMFQ at baseline and follow-up i.e., contentment with memory ($r = -.39, -.48$) and memory ability ($r = -.31, -.52$). Memory strategy-use was unrelated with PMFQ across time. One-month test-retest reliability = .61. These results offer further evidence of the PMFQ's construct, convergent, and discriminant validity, and its psychometric consistency over time. Furthermore, the PMFQ may prove valuable to healthcare providers in the development and monitoring of individualized treatment plans for patients with mental fatigue and cognitive complaints.

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REACTIVITY TO ECOLOGICAL MOMENTARY ASSESSMENT OF AFFECTIVE STATES AMONG CURRENTLY AND FORMERLY HOMELESS YOUNG ADULTS

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Background: Ecological momentary assessment (EMA) is thought to yield both feasibility and acceptability among marginalized groups, such as homeless and formerly homeless young adults, as a method to capture and understand context and correlates of health behaviors. However, the day-to-day life experience of those who have experienced homelessness is unique, and it is not known how the introduction of an intensive longitudinal data collection protocol may affect this population, particularly regarding self-report as self-reflectivity of a behavior may in fact alter the behavior. This study examined reactivity to EMA through use of pre- and post-tests for symptomatology of anxiety and depression among currently and formerly homeless young adults, as well as individual EMA compliance rates (i.e., how many prompts were completed).

Methods: Data come from a study of HIV risk among young adults who have experienced homelessness. 236 young adults ages 18-27 were recruited from drop-in centers or housing programs located in Los Angeles between 2017 and 2019. EMA prompting occurred over a 7-day period and asked about risk behaviors and affective states every two hours. Multilevel modeling was used to assess the impact of EMA compliance on depression (PHQ-9) and anxiety (GAD-7) scores from baseline to follow-up. All models controlled for age, gender, sexual orientation, race, and housing status.

Results: Both anxiety and depression scores decreased from baseline to follow-up ($\beta = -1.77$, $p < 0.001$; $\beta = -1.10$, $p = 0.03$, respectively). However, no significant effects for EMA compliance were detected for either anxiety or depression thus, the decrease in symptomatology was not associated with compliance.

Discussion: While it is true that results indicate improvement in anxiety and depression symptomatology from baseline to follow-up, no significant emotional reactivity was detected in terms of anxiety and depression symptoms based on EMA compliance. Decreases in symptomatology scores do indicate a change between baseline and follow-up, therefore future studies should consider the potential reactivity to EMA beyond compliance, as there may be elements associated with EMA other than the number of prompts completed. In this case, symptomatology decreased during the study, but it is unclear why participation resulted in improvement. Results have implications for the continued development of EMA use with marginalized groups.

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HEALTH PERCEPTIONS OF CANNABIS: A QUALITATIVE ANALYSIS

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Information on the health effects of cannabis use is often based on anecdotal experience rather than empirical investigation. This could be a double-edged sword: on one hand, misinformation about the health claims of cannabis may abound, while on the other hand, anecdotal evidence can lend a broader understanding of a complex phenomenon. To get a more comprehensive understanding of perceptions about the health benefits and risks of cannabis use, Magnan and colleagues (2019) surveyed 408 participants (72% lifetime users) from a psychology subject pool consisting of 21 true or false questions of potential positive and negative health effects. The most commonly endorsed positive consequences included pain relief (95.3%) and stress management (84.8%) while the most commonly endorsed negative consequences included impaired decision-making (88%) and impaired driving (87.5%). The current investigation is a qualitative extension of this work based on open-ended responses to a prompt to add additional health effects of cannabis use not included in the pre-established list of outcomes. Of the 1765 items provided by participants, the majority ($f = 880$, 50%) were categorized as similar to items already on the inventory. The remaining 885 responses were reviewed and categorized into items reflecting novel content. A number of additional content areas emerged related to perceived health effects of cannabis, suggesting that beliefs about effects of cannabis varies across individuals. The most frequent additional effect reported was that cannabis can be used to increase appetite/cause weight gain ($f = 122$); other commonly reported effects included makes you feel relaxed ($f = 97$) and makes you feel paranoid ($f = 43$). Endorsement of any of these perceived consequences did not significantly differ based on lifetime use (χ^2 s ranged from .21-.57, $ps = .48-.65$) or past-month use (χ^2 s = .31-1.06, $ps = .30-.58$). Further examination of these data as well as replication among different samples for a better understanding of health perceptions of cannabis use will inform future lines of empirical inquiry and health messaging efforts to inform about the positive and negative effects of cannabis.

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MEASURING OUTCOMES IN AN OUTPATIENT PEDIATRIC BEHAVIORAL PAIN MANAGEMENT SERVICE

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Background: Psychological interventions are an integral part of pain management for children and adults. Creating systems that routinely collect patient-reported outcomes (PROs) and develop metrics of treatment success is important at a patient and systems level. The outpatient behavioral pain management program in a large children's hospital integrated evidence-based PRO measures (functional disability, pain coping efficacy and pain intensity) for youth receiving treatment for chronic pain. Using composite responder outcomes, the program established classification criteria for "positive treatment response" to assess the program's intervention success. This was tracked across psychology providers to capture the success of the system overall.

Purpose: The purpose of this study was to report program effectiveness over the last 10 years regarding 1) reliably administering key PRO measures and 2) maintaining an average of 75% or better of patients achieving a "positive treatment response" at the end of treatment across providers.

Methods: PRO measures were completed electronically by patients presenting for psychological treatment of chronic pain and saved to flowsheets in the electronic medical record (EMR). Data were extracted and aggregated at a summary level regarding 1) number of visits in which one of the key PRO measures (Functional Disability Inventory--FDI) was administered and 2) number of patients meeting the criteria for "positive treatment response" following psychological treatment for chronic pain (25% reduction in FDI, 30% decrease in average pain intensity, and/or a score of ≥ 10 on pain coping efficacy).

Results: Data were collected for 121 consecutive months from September 2009 to August 2019 with 18,583 patient encounters for psychology assessment/treatment. The FDI was collected at 91.3% of these visits. Of the 118 months of collected post-treatment data, 1486 patients completed a prescribed course of treatment (which was documented by the provider in the EMR), with 82.2% having a "positive treatment response". Across psychology providers, the program showed a positive treatment response of 75% or better for 84 of 118 months (71.2%).

Conclusion: Reliable systems for collecting PROs can be established, are sustainable, and allow for tracking individual treatment success as well as system-wide progress. They can be valuable for both understanding and improving service delivery for pediatric patients with chronic pain.

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INCONSISTENCIES WHEN MEASURING MOTIVATION TO COMPLY: EXPLORING A CONSTRUCT THAT HAS BEEN MIS-DEFINED AND OPERATIONALIZED

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The Theory of Planned Behavior (TPB) is widely used in research and practice. Although there is a great deal of evidence that shows valid and reliable methods of evaluating the psychosocial constructs within the TPB, motivation to comply (mtc) has remained problematic, in that it has not typically contributed to the understanding of how subjective norms are determined. In Fishbein and Ajzen's 1975 book, "Belief, attitude, intention, and behavior" they noted mtc was the "least developed" construct in the model, and while their suggestions for operationalizing and measuring mtc were only tentative, they also conceded that a problem was researchers could interpret the meaning of the construct in different ways. In their 2010 follow up book "Predicting and Changing Behavior", they noted this again and called for new approaches or alternative measures to the construct. The nature of mtc stems from its interaction with normative beliefs for understanding how one forms their subjective norm pertaining to a behavior. Normative beliefs are beliefs one has about important referents (individuals or groups) who want/do not want an individual to perform a behavior, and motivation to comply centers on the motivation one has to act in the way those important referents desire. To understand the extent to how mtc has been operationalized and measured in the literature, we first conducted a systematic review utilizing multiple data bases (i.e. medline, ERIC) with the key words 'Motivation to Comply'. Overall, we found 93 manuscripts, of which 27 measured mtc. Of these studies, only 55% measured mtc as 'one's motivation to comply with a referent's wishes' (i.e. In general, I want to do what my parents think I should do), while other studies measured mtc as some other psychosocial construct such as attitudes (My husband's approval for taking oral contraceptives would be important for me). In a follow-up study, we used a valid and reliable survey to evaluate the TPB constructs for sleep behaviors, and developed alternative measures to mtc such as attitudes to comply, and normative pressure to comply. When interacting with measures of normative beliefs across 3 referents (parents, friends, and professors), attitudes to comply appeared to slightly outperform measures of mtc when measuring their association with generalized subjective norms. Results from this study point to the need for standardization in the definition and measurement of the mtc construct.

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INTERVENTION MEDIATORS OF OUTCOMES FOLLOWING LATENT PERIODS: AN APPLICATION TO WEIGHT LOSS

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Background: Behavioral interventions have shown benefit for helping people maintain weight loss. Mediation analyses could shed light on mechanisms and inform intervention refinement. Many statistical approaches have been applied to mediation analyses, sometimes without consideration of the assumptions required by mediation theorems. In the context of a successful weight loss maintenance intervention, we discuss which assumptions—beyond the usual assumptions (VanderWeele 2015)—are necessary to justify causal mediation analysis with latent periods between measurement time points, i.e. when a continuous-time process is measured in discrete steps.

Methods: Secondary analysis was conducted using data from a randomized controlled trial (N=222) comparing a weight loss maintenance intervention to usual care in Veterans. Weight and self-reported satisfaction with outcomes, social support, and recovery and maintenance self-efficacy were self-reported at randomization and at 14, 26, 42, and 56 weeks. The primary outcome of weight change at 56 weeks showed a small benefit of the intervention (estimated treatment difference 1.6 kg, 95% CI: 0.1, 3.1). Statistical models examined causal mediation of the intervention effect by psychosocial constructs (satisfaction with outcomes, social support, and self-efficacy) under alternative assumptions about (a) latent periods between measurements and (b) complete mediation by observed measures of caloric intake and energy expenditure.

Results: Our statistical analyses indicated that causal-mediation effects of psychosocial constructs can be estimated despite latent periods when measured dietary intake and energy expenditure fully mediate the intervention effect. Statistical models found no statistically significant evidence for mediation by psychosocial constructs measured at week 26 (estimated indirect effect by all mediators kg, 95% CI: -1.878, 0.570).

Conclusions: Findings illustrated that when complete mediators are measured in at least one period, latent periods in a continuous time process can be handled in causal mediation analysis. However, in this case of psychosocial mediators of a weight loss maintenance intervention trial, no statistically significant mediation effect was detected. This work highlights the precarious nature of mediation in behavioral medicine and the strong assumptions required to accept statistical results. Future work should incorporate features to warrant the assumptions needed for causal mediation into the study design.

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WORKING CONDITIONS ARE KEY TO “WHOLE HEALTH”: AN ANALYSIS OF FOCUS GROUP DISCUSSIONS WITH VETERANS AFFAIRS EMPLOYEES

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Background: The Veteran's Health Administration (VA) “whole health” strategy focuses on what matters most to the whole person for both veterans and employees. A growing body of literature indicates both employee health and the quality of health care they provide are affected by working conditions, including physical, organizational and psychosocial factors at work. More information is needed about working conditions at the VA to design improvements that will benefit VA employees and ultimately, more effectively fulfill the VA mission of improving the health and well-being of America's veterans. To identify working conditions that mattered most to VA staff, we conducted focus groups with employees to better understand the positive and negative aspects of their work environment.

Methods: Two investigators from Harvard Center for Work, Health & Wellbeing and one VA investigator conducted 9 focus groups (1 leadership, 2 supervisor and 6 front-line employees) to discuss working conditions in one VA healthcare facility. We transcribed audio recordings of these focus groups and performed content analysis of the transcripts using NVivo software. Emergent themes were confirmed through independent analysis by two investigators. Exemplar quotes were selected for each emergent theme.

Results: Fifty-five staff members participated in 9 focus groups of 5-9 participants per group. Employees generally agreed that serving veterans and the mission were the most positive aspects of their job. Many felt the VA did a good job at providing educational benefits and career development opportunities. Some commented on the sense of community created by co-workers, and appreciated having flexible schedules, supportive supervisors, and leadership support in the form of policies and reporting mechanisms that listen to employee concerns. Conversely, some participants raised concerns about stressful working conditions, such as mandated overtime and being assigned collateral duties. Across all groups, employees highlighted staffing shortages and hiring challenges as a cause of negative employee morale. Employees also discussed health hazards related to the physical environment, not taking breaks, and staff safety concerns by dealing with agitated patients.

Conclusions: Actions to enhance and improve working conditions at the VA may pay dividends in achieving the whole health strategy as well as improve the health of the veterans they serve.

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PERCEIVED AND ACTUAL SOCIAL SUPPORT ON FACEBOOK: A MIXED METHODS STUDY OF MILITARY VETERANS

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Background: The perceived availability of social support in time of need is known to be strongly associated with physical and mental health. However, less is known about the influence of actual social support or social support that is exchanged through social media platforms. The aims of this study were to: a) characterize military veterans' perceived and actual social support received on Facebook, and b)

determine whether exchange of social support on Facebook is associated with lower risk of psychiatric disorders or suicidality.

Methods: We used an explanatory sequential mixed methods design (quantitative analysis of survey, followed by qualitative analysis of Facebook posts). United States military veterans who served after September 2001 and responded to an ad on Facebook completed an anonymous online survey (n=587), a subgroup of whom provided access to their user activity on Facebook (n=19). Social support was quantitatively measured using a scale assessing perceived social support on Facebook, and qualitatively assessed using content analysis of Facebook activity. Risk for psychiatric problems was assessed with reliable and valid screening tools for major depression (PHQ-2), PTSD (PC-PTSD), alcohol use disorder (AUDIT-C), and suicidality (DSI-SS).

Results: Self-reported use of Facebook or other social media platforms for social support was low. Perceived social support on Facebook was associated with reduced risk of screening positive for major depression (AOR=.969, SE=.016, p=.045) and suicidality (AOR=.957, SE=.017, p=.012), but not associated with symptoms of PTSD or alcohol use disorder. For each one-point increase on a 12-point subscale of received social support on Facebook, there was an estimated 9% decreased odds of current suicidal ideation (p=.023). Content analysis revealed that actual social support on Facebook consisted of both received and given social support. Imbalance in participants' actual social support (“low received, high given” or “low given, high received,”) was associated with screening positive for any psychiatric disorder (p=0.03)

Conclusions: Lack of perceived social support and imbalance in the exchange of actual social support on Facebook may both be indicators of risk of active psychiatric symptoms among post-9/11 era military veterans in the United States.

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ADVERSE CHILDHOOD EXPERIENCES IN VETERANS SEEKING WEIGHT MANAGEMENT SERVICES

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Adverse childhood experiences (ACEs) drastically increase risk for a wide range of mental illness and health problems, including outcomes related to weight management. The present study aimed to examine the prevalence of ACEs and to explore potential relationships between these experiences and measures of weight and health in a sample of weight loss seeking Veterans. Participants were 224 Veterans (mean age 59.9 (0.86), mean Body Mass Index (BMI) 35.27 (0.41), 85.71% male, 63.59% white) receiving care at VA Connecticut Healthcare System (VACHS) who attended an orientation session of VA's behavioral weight management program, MOVE!. Participants completed a packet including demographics, a measure of Adverse Childhood Experiences, the Weight Control Strategies Scale (WCSS), the Godin Leisure-Time Exercise Questionnaire (Godin), the European Quality of Life Screener (EuroQoL-5D) and a weight-specific measure of quality of life. 87.9% Veterans completed the ACE Survey, and 68.5% of completers endorsed any ACE. The average number of reported ACEs was 2.2 (SD: 0.18), with 44.7% reporting more than one type. The most frequently reported ACE was parental separation (37.2%), followed by household substance abuse (33.3%), emotional abuse (27.6%), physical abuse (24.5%), emotional neglect (23.0%), and household mental illness (19.7%). Women were more likely to report any ACE and reported significantly more ACEs compared to males, (81.5% v. 66.5% and 4.0 v. 1.9, respectively). There was no difference in BMI, highest adult BMI, race, education, or disability status between those who reported any ACEs and those who did not. In regression models accounting for differences by gender, ACE was predictive of physical activity ($r^2 = 0.04$, $p = 0.014$) and several quality of life measures, including QoL measured dimensionally, ($r^2 = 0.05$, $p = 0.004$), QoL measured with a visual analog scale (0-100) ($r^2 = 0.04$, $p = 0.012$), and weight specific QoL ($r^2 = 0.13$, $p < 0.001$). BMI and weight control strategies were not associated with ACEs. More than two-thirds of Veterans seeking weight management services through VACHS reported at least one ACE with close to half of those reporting more than one type of ACE. Female Veterans were more likely to report ACEs than male Veterans. In the context of treating Veterans in weight management services, ACEs may have more important implications for exercise interventions and quality of life outcomes than for dietary interventions and weight outcomes.

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NATIONAL INSTITUTES OF HEALTH FUNDED ADHERENCE RELATED MULTILEVEL RESEARCH

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Background: Poor adherence to treatment and prevention regimens is prevalent across chronic conditions and patient populations. There is limited evidence and understanding of how to improve adherence to many treatment and prevention behaviors. Descriptive and intervention research may address adherence determinants at one or more levels of social ecologic influence (patient, caregiver/family, provider and/or healthcare system, and community levels).

Purpose: This project examines the National Institutes of Health (NIH) grant portfolio of adherence related multilevel research to identify scientific gaps and inform future funding opportunities.

Methods: The Query, View, Report (QVR) system was used to identify grants funded by the NIH from 10/1/2016-5/30/2019. Eligible grants were identified using adherence related search terms from the NIH Research, Condition, and Disease Categorization thesaurus. The analysis consisted of screening titles, abstracts, and specific aims to confirm eligibility, abstracting key variables from each grant, synthesizing research findings and describing scientific gaps. Information about the grant mechanism and funding were abstracted directly from QVR. Manual data abstraction captured additional information about the adherence behaviors under study, design and methodology.

Results: Of the 196 grants identified, 18 grants were excluded because the focus was not on human behavior or interaction with the healthcare system. Eligible grants were funded by Institutes across NIH, including the NIMH (17%), NIDA (12%), NHLBI (12%), and NCI (9%). Grants focused most frequently on HIV (40%), heart diseases (10%), and cancer (8%). Most grants examined adherence to prescribed medication (84%), followed by health behavior recommendations (3%). The most common measures of adherence were self-report (34%), Medication Event Monitoring Systems (MEMS) (17%), and pharmacy records or the electronic health record (13% respectively). Most grants included interventions (84%), followed by observational studies (11%). Almost half of the studies included multilevel assessments of adherence determinants (47%), whereas less than half were multilevel interventions (21%).

Conclusions/Implications: There is a need for more multilevel interventions to understand how to improve adherence behaviors, identify the determinants of adherence at each level, and the most effective strategies to improve adherence behaviors. There are multiple methods and new innovative approaches (e.g. drug levels in hair samples) to assess adherence. The findings from this project will inform new research priorities and funding opportunities at NIH to support research to improve adherence behaviors.

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CHANGING PERCEPTIONS AND EFFICACY OF GENERIC MEDICINES BY INCREASING TRUST: AN INTERVENTION STUDY

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Objectives: Generic medicines have been associated with less efficacy and more side effects compared to innovator products. The central aim of the current study was to examine if perceptions, pain relief and side effects of generic medicines can be changed with two different types of educational video interventions.

Methods: Participants with frequent tension headaches in an average fortnight were randomly assigned to watching a video explaining either the process of approval and release of generic medicines (release process-video: n=34), similarities between innovator and generic drugs (similarity-video: n=35) or types and epidemiology of headaches (control-video: n=34). After watching the video, participants took in a randomised order an innovator and a generic pain medication to treat their next consecutive headaches. Perceptions of medicines, pain severity, and side effects were measured.

Results: Mixed-effect ANOVAs showed that only after watching the release-process video participants perceived generics as more safe and of higher quality. The preference of taking a generic compared to an innovator medication increased significantly only in the similarity-video group. Trust in generics increased in both experimental groups compared to the control group. Independent of the type of video, the innovator product induced a higher pain relief than the generic medication. The educational intervention had no effect on the medication's side effects.

Discussion: Results of this study show that educational video interventions can change individuals' perceptions of and trust in generic drugs. The videos used in this study however could not counteract the unspecific effect of the label "generic" on pain relief.

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KNOWLEDGE AND AWARENESS OF FOOD-ENERGY-WATER NEXUS: A DRIVER OF FOOD WASTE BEHAVIORAL CHANGE

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Introduction: The Food-Energy-Water (FEW) Nexus represents a scientific and technical sustainability-related construct meant to conceptualize the interrelations of systems critical to food production. Research related to FEW has gained in popularity across multiple disciplines; even so, little research has to date explored awareness of and knowledge about the nexus among the public. This research may be vital to pursue given the environmental pressures these systems face which, in part, are related to individuals' behavioral and consumer choices. Although studies have often demonstrated that awareness alone is unlikely to influence individuals' food- and other health- or sustainability-related behaviors, emphasizing the environmental consequences of target behaviors could trigger biospheric values that motivate consideration of pro-environmental or health behaviors. The purpose of the present study was to examine associations between knowledge and awareness of the FEW nexus and food waste-related behaviors among Arizona residents participating in a household food waste reduction study.

Methods: Sixty-five adults, self-identified as the primary food purchasers in their home, were included in this cross-sectional analysis. Participants completed a survey that asked about current food waste behavior, knowledge about the FEW nexus in Arizona, awareness about the FEW nexus generally, and theoretically based behavior change constructs (i.e., perceived behavioral control, intentions, norms, and attitudes). Spearman correlation analyses were used to explore associations between variables under study. Significance was set at $\alpha < 0.05$.

Results: Awareness and knowledge were not associated with food waste behavior. Awareness, but not knowledge, was significantly associated with perceived behavioral control ($r = .31, p = .02$), intentions ($r = .29, p = .03$), norms ($r = .36, p < .01$), and attitudes ($r = .35, p < .01$).

Discussion: Our results suggest that educating people about the interrelated nature of food, energy, and water systems could be a useful tool in supporting factors associated with food waste behavior. Future research should include larger sample sizes as well as educational interventions to reduce food waste in the home with an emphasis on the FEW nexus.

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EARLY QUALITATIVE FINDINGS TO INFORM A NOVEL MULTICOMPONENT BEHAVIORAL INTERVENTION IN MIDLIFE ADULTS: BE SMART

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Background: Physical inactivity and poor sleep exacerbates cardiovascular disease (CVD) risk, with nearly one-third of preventable CVD deaths occurring before age 65. As midlife adults (50-64 years) are at an increased risk for CVD, it is imperative that prevention strategies target key behaviors known to facilitate the development and early onset of CVD. Here we describe early results of an ongoing qualitative study among midlife adults to inform a comprehensive, cloud-based, physical activity (PA) and sleep intervention called **Bio-behavioral Systems to Motivate And Reinforce Heart Health (Be SMART)**.

Methods: Study-eligible participants attended a semi-structured, moderator-led focus group or interview to elicit feedback on their value of PA and sleep as health behaviors, use/familiarity of mobile and wearable technology and proposed intervention procedures. Data were transcribed verbatim and thematically analyzed. Four project staff independently and iteratively coded transcripts. Participants also completed a self-report survey onsite. Data collection for this study is ongoing.

Results: Participants (N=8) were primarily female (62.5%) with at least some college/two year degree (n=7) and most were in the contemplation stage of PA change (n=6). Overall, participants were obese and hypertensive (mean BMI=33.1; resting BP=148/92) and most (n=7) reported using a wearable device to track their PA and/or sleep in the past 6 months. To date, 38 themes have been identified. Themes commonly reported included, PA/sleep challenges, activity tracker use, reaction to Fitbit wear criteria, and Be SMART feedback process. Responses to the proposed Be SMART study procedures were overall positive, with one participant stating, "I think it's great to be in on something that can actually help focus and tailor something to be helpful to many people."

Conclusion: Although preliminary, early study findings suggest that midlife adults experience various challenges to PA and sleep, are comfortable using mobile/wearable technology, and are receptive to the proposed Be SMART intervention procedures. Additional qualitative data will enable a more robust analysis of midlife adult perceptions and results will provide greater insight into this high-risk population allowing for a more personalized approach to behavioral medicine.

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EFFECTS OF TAI CHI EASY ON BODY FAT PERCENTAGE, SLEEP QUALITY, AND EMOTIONAL EATING IN MIDLIFE AND OLDER WOMEN

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Background/Purpose: Approximately 30% of the female adult population in the United States is obese (BMI > 30 kg/m²), which is a key risk factor for cardiometabolic diseases, neurocognitive disorders, diabetes, certain types of cancer, and deleterious psychosocial outcomes (i.e., anxiety, depression). Preliminary evidence demonstrates that Meditative Movement (MM) practices (combining breath focus, body movement, and a meditative state) such as Tai Chi and Qigong may improve body composition and associated behavioral factors (i.e., sleep quality, diet quality). The purpose of this single group pilot study was to evaluate the change in body fat percentage, sleep quality, and emotional eating in a group of midlife/older women after an 8-week standardized Tai Chi Easy (TCE) intervention.

Methods: Women age 45-75 were screened for ability to engage in low-intensity gentle movement. The TCE intervention (combining Tai Chi and Qigong) was delivered for 8-weeks (30 minutes per week) with certified practice leaders; on average participants attended 5 classes. Participants were encouraged to practice most days per week at home with take-home practice materials. Pre- and post-intervention data collection included self-report psychometric measures (i.e., sleep quality, eating behaviors), body weight and body composition.

Results: The majority of participants (N = 51) (M age = 53.7) were white (80.4%) and had attended four years of college or more (70.6%). Body fat percentage (Tanita scale), sleep quality (Pittsburg Sleep Quality Index: PSQI), and emotional eating (Three Factor Eating Questionnaire-Revised 18: TFEQ-R18) were assessed and tested for change from pre- to post-intervention using paired sample t-tests. Change in body fat percentage did not reach statistical significance; however, change in PSQI (sleep quality) was significant ($p = .04$) and change in one factor of the TFEQ-R18, emotional eating, approached significance ($p = .07$).

Conclusion: Participation in an 8-week low-intensity exercise program, TCE, showed significant differences in sleep quality and a trend towards significance in emotional eating (less reporting of the maladaptive behavior in response to negative emotions). Further evaluation with larger sample sizes are needed for examining factors associated with body composition changes in response to MM practices such as Tai Chi and Qigong.

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LIFESTYLE MODIFICATION AND WEIGHT LOSS TO REDUCE BREATHLESSNESS IN COPD

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Chronic Obstructive Pulmonary Disease (COPD), one of the most prevalent respiratory conditions worldwide, subjects with coexisting obesity have worse breathlessness, worse quality of life, more frequent exacerbations and more healthcare utilization than their non-obese counterparts. In obese COPD patients with optimal medical management, weight loss can be an effective method to reduce breathlessness; however there is a knowledge gap regarding feasible interventions. Our study aimed to define the feasibility and acceptability of a weight loss intervention to decrease breathlessness through lifestyle modification in patients with significant obesity and COPD.

Methods: The study was IRB-approved (IRB: 18-001832) and registered with clinicaltrials.gov (NCT: 03836547). Patients were recruited from our pulmonary outpatient practice. Inclusion criteria were age over 17 years, BMI > 34, dyspnea of Medical Research Council class II or greater, and diagnosis of chronic lung disease.

Our 8-week intervention included the Weight Watchers online program, a Garmin® wristband and a Bluetooth smart scale for weigh-ins at home and weekly telephonic motivational interviewing based health coaching for goal setting. Outcomes included weight, BMI, percent body fat, and skeletal muscle mass with the InBody770, the Mindful Eating Questionnaire (MEQ), and disease-specific quality of life measured by the Chronic Respiratory Questionnaire (CRQ).

Results: We recruited 14 Caucasian subjects, mostly female (86%) and married (80%). Mean age was 67. Mean weight was 263.4lbs with a mean BMI of 43.2. Average weight loss of 3.5% of their baseline weight (SD 2.2%, $p=0.0001$), and a mean BMI decrease of 1.5kg/m² (SD 0.8 kg/m², $p<0.0001$), percent of body fat went down an average of 1.8% (SD 1.9%, $p=0.0072$). The MEQ summary increased 0.2 (SD 0.3, $p=0.0208$). All CRQ domains improved: Dyspnea 0.7 (SD 1.1, $p=0.0460$), Fatigue 0.9 (SD 0.8, $p=0.0015$), Emotions 0.6 (SD 0.9, $p=0.0283$), Mastery 0.9 (SD 1.0, $p=0.0053$).

Discussion: This intervention is feasible and likely effective to produce weight loss and increase the quality of life measures including dyspnea, in obese people with chronic lung disease. Increasing self-awareness through monitoring food, checking daily steps, and measuring weight, could explain the success of our intervention and also the weekly health coaching to set goals and maintain motivation for change. The improvement in CRQ indicates the clinical relevance of the intervention with regard to increasing quality of life. While the small sample size and homogenous participant demographics are a limitation of the study, we reached statistical and clinical significance in the relevant outcomes measured.

This intervention may represent a scientific and clinical opportunity to improve breathlessness in highly symptomatic and obese patients with COPD.

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REWARD PROCESSING, EXECUTIVE FUNCTION, AND PHYSICAL ACTIVITY IN A PILOT TEXT-DELIVERED INTERVENTION FOR OBES ADOLESCENTS

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Objective: This study examines changes in reward processing and executive function across a pilot text-delivered intervention to increase physical activity in overweight and obese adolescents. Behavioral economic incentives for physical activity in the context of daily and weekly goal setting and monitoring may improve reward processing and executive function by training self-monitoring and goal-setting skills, modifying reward expectation contingencies and via physiological pathways linking increased physical activity and enhanced cognitive function. It was hypothesized that adolescents who evidenced greater increases in physical activity would experience greater improvements in reward processing and executive function.

Methods: Adolescents (N=27) aged 13 to 18, with a body mass index at or above 90th percentile participated in a 12-week text-delivered behavioral economic incentive intervention to increase physical activity. At baseline and 12-week follow-up, teens completed measures of self-control, physical activity and appetitive cognitive processing, and a behavioral measure of delay discounting. Parents reported on their teen's executive function problems. Teens also wore a Fitbit watch to track daily vigorous and moderate physical activity.

Results: Improvements in adolescent self-control were associated with increased adolescent and accelerometer reported vigorous physical activity ($r=.56$, $p=.003$; $r=.38$, $p=.062$, respectively). Further, improvements in delay discounting performance were associated with adolescent-reported increases in walking ($r=.64$, $p=.007$) and overall physical activity ($r=.54$, $p=.03$). Also, improved cognitive processing in the presence of food was associated with increased adolescent-reported vigorous physical activity ($r=.54$, $p=.005$), and overall physical activity ($r=.41$, $p=.036$). Last, parent-reported improvements in adolescent task initiation were also associated with increased overall accelerometer reported physical activity ($r=.49$, $p=.014$) and decreased body weight ($r=.41$, $p=.04$).

Conclusion: Interventions using text-delivered incentives to encourage increased self-monitoring and goal-setting for additively increased and sustained physical activity might improve reward processing and executive function in overweight and obese adolescents. Further research in larger randomized controlled studies is needed to elucidate the direction of the causal relationship between these biobehavioral and cognitive processes in adolescence.

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THE ASSOCIATION BETWEEN PHYSICAL ACTIVITY AND CALORIE INTAKE DURING BEHAVIORAL WEIGHT LOSS TREATMENT

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Standard behavioral treatments for weight loss prescribe a combination of reduced energy intake (EI) and increased energy expenditure through physical activity (PA). Relationships between PA and EI are complex and poorly understood, often yielding equivocal findings (e.g., whether PA increases or decreases hunger). Critically, the free-living within-day association between PA and EI is rarely evaluated and the effect of this association on weight loss has not been explored. The present study utilized data from a 12-week behavioral weight loss program where the PA goal was 30 minutes/day and the calorie goal was individualized based on standard calorie-deficit prescriptions. Participants wore a commercially-available wrist-worn activity monitor and self-monitored EI daily. The difference from an individual's calorie goal was calculated for each day (i.e., positive numbers indicated that EI exceeded the calorie goal). A linear mixed-model was conducted predicting difference from calorie goal. Fixed effects for between- and within-subject (BS and WS) PA, individual calorie goal, and day of the intervention and random effects for intercept and WS PA were included. The random effects estimates for slope (i.e., the association between difference from calorie goal and WS PA) were generated. These values were then correlated with weight loss at post-treatment. Trend-level WS ($p = .09$) effects indicated that, on average, lower PA than an individual's own average was associated with greater overeating on the same day. However, there was considerable variability in the association between PA and calorie difference, including some individuals for whom the effect was opposite. This individual effect was correlated with weight loss ($r = -.28, p < .05$), indicating that individuals with more negative associations between PA and eating (i.e., increased PA is associated with decreased calorie intake) lost more weight during treatment. Results suggest that PA has a small average association with concurrent EI. Interestingly, the individual-level associations for each person were related to weight loss. This may mean that individuals who experience greater appetitive control with PA may have better success with standard recommendations for weight control. Alternatively, it may be that maintaining lower EI increases the likelihood of PA engagement on that day. Future research should investigate the temporal effects of PA and EI during behavioral weight loss.

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EXAMINING GENDER DIFFERENCES IN YOUNG MEN AND WOMEN'S GOALS FOR A TECHNOLOGY-DRIVEN WEIGHT LOSS INTERVENTION

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Background: Emerging adults (EA) are at high risk for weight gain and obesity yet are underrepresented in behavioral weight loss (BWL) programs and fare worse than their older counterparts when they join these programs. Further, even within BWL programs adapted specifically for this population, young men are particularly challenging to recruit, representing less than 20% of samples in recent trials. One hypothesis for the poor recruitment of men is that men's goals for a weight loss program are not described in recruitment messages for these studies. Understanding whether men and women's personal goals for participating in a weight loss program could be a key way to tailor recruitment messaging. As such, the objective of this study is to compare young men and women's personal goals for a BWL program.

Methods: Participants (N=382; 21.9 + 1.2 years; 83% female; BMI=33.5 + 4.9 kg/m²) were recruited for a technology-driven weight loss intervention adapted for this age group. At baseline, participants ranked their top 3 personal goals from a list of 15 areas in which they wanted to see change during the program. The most commonly reported areas (n=8) were coded as yes or no if the goal was ranked as one of their top 3. Chi-square tests were conducted to compare men and women on the most commonly reported goals for the program; using Bonferroni correction to adjust for multiple comparisons ($p < .006$).

Results: Overall, the most commonly reported areas for wanting to change in the program were: weight (62.7%), physical fitness (43.7%), body fat percentage (25.7%), body shape (25.1%), energy level (24.1%), clothing size (19.6%), confidence (18.8%), and self-esteem (18.0%). Weight was the most commonly ranked as a top goal (43.5%), followed by physical fitness (11.3%) and body fat percentage (8.9%). No significant differences were found between men and women for personal goals.

Conclusion: Emerging adults have a desire to lose weight and body fat, as well as improve physical fitness when it comes to personal goals for a weight loss program. While there were no gender differences in goals for a weight loss program, this could be due to enrollment of a treatment seeking sample. Coupled with differential enrollment of young men, it is possible the results may not be representative of non-treatment seeking young men. More research is needed to understand potential gender differences in goals for a weight loss program to improve recruitment messaging targeting young men.

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THE RELATION OF INTRINSIC MOTIVATION TO TREATMENT RESPONSE ACROSS BEHAVIORAL WEIGHT LOSS INTERVENTIONS OF VARYING INTENSITY

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Outcomes of behavioral weight loss programs are highly variable, with approximately 25% of participants failing to achieve clinically significant weight loss even after receiving frequent and intensive treatment. While outcomes generally improve with greater intervention intensity (i.e., more direct clinical support and accountability), many participants receive minimal benefit from higher levels of care. However, the individual differences determining participant need for high vs. low-intensity treatment are not well-studied. One important potential factor is intrinsic motivation, which is negatively associated with weight loss treatment adherence and outcome. Although such evidence might suggest that motivation is more important for success in interventions providing low accountability (i.e., low-intensity), little research to date has examined whether intrinsic motivation differentially predicts weight loss success between interventions of varying intensity.

The present study examined the relationship between baseline intrinsic motivation (TSRQ) and weight loss outcome across two completed behavioral weight loss intervention studies, one high in intensity and the other low. Both interventions targeted weight loss among participants with overweight or obesity. The high-intensity intervention ($N=186$) examined the effects of two group-based behavioral weight loss treatments, and the low-intensity intervention ($N=105$) examined the effects of a 75-minute psychoeducational workshop designed to reduce intake of foods with added sugars plus at-home computerized neurocognitive trainings. For both trials, imputed weight losses were coded as a binary variable such that a weight loss of 2% at Week 9 was considered a successful outcome. Results indicated that as expected, more participants reached 2% weight loss in the high-intensity (83.7%) relative to the low-intensity program (53.3%), whereas intrinsic motivation did not predict treatment response when examined across trials ($\chi^2 = 1.0$, $OR = 0.9$, $p = 0.32$). However, intervention type interacted with baseline intrinsic motivation to predict successful outcome ($\chi^2 = 5.6$, $OR = 2.7$, $p = 0.02$) such that the effect of intrinsic motivation on treatment response was greater in the high-intensity relative to the low-intensity condition. Specifically, in the high-intensity intervention, motivation scores were 5.1% greater in treatment responders relative to non-responders. These findings, while surprising, could relate to the fact that higher-intensity interventions require greater effort, and therefore motivation, to comply with intervention requirements and thereby benefit from treatment. The results further suggest that individuals low in intrinsic motivation may be better-suited to low-intensity interventions, where they may receive similar benefits to high-intensity interventions at a reduced cost.

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WEIGHT STATUS VARIES IN GIRLS BORN IN AND OUTSIDE THE US

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Introduction: Although many immigrants come from low socioeconomic status backgrounds, there is widespread evidence that most immigrants have better than expected health outcomes compared to their US born peers. Their “protection”, however, often dissipates as they acculturate and adopt maladaptive lifestyle practices related to eating habits, physical activity, and screen time. The purpose of this study was to investigate whether rates of overweight/obesity varied as a function of birthplace (inside or outside the US) in a group of ethnically diverse preadolescent and early adolescent girls.

Methods: The participants were 375 middle school aged girls ($M = 11.8$ years). Approximately 92% had an ethnic minority

Background: Body mass index was calculated after measuring height and weight. Approximately 57% of the girls were slightly underweight or normal weight, while 43% were overweight or obese. Birthplace was determined by their parents' response to the item “Country where your child was born.” Response options were coded as US born or non-US born. Approximately 76% of the girls were US born. Girls were asked about sports team participation, days in the last week they were physically active for at least 60 minutes, and time they spent on a computer outside of school. Parents were also asked about their child's eating habits.

Results: Chi-square tests of independence showed that there were differences in weight status based on birthplace ($\chi^2(1, N = 354) = 7.71$, $p = .006$). Among the US born girls, 52.8% were underweight or normal weight, while 47.2% were overweight or obese. Among the non-US born girls, 69.7% were underweight or normal weight, while 30.3% were overweight or obese. As such, rates of overweight/obesity were 1.5 times higher among girls born in the US compared to the girls born outside the US. Although non-US born girls participated in significantly more organized physical activities than girls born in the US ($p=.01$), there were no group differences in self-reported physical activity, screen time, or eating habits ($p > .05$). On average, the girls reported spending 2.4 hours on the computer away from school, being active for 60 minutes 5 days a week, and as having good to very good eating habits.

Conclusion: The findings suggest that more engagement in organized sports may be health protective for immigrant girls. While the mechanism remains unclear, it is possible that being part of a team provides benefits associated with social support and belongingness. Further research is warranted to examine other possible lifestyle and sociocultural factors that support healthy weight status. A better understanding of the protections afforded by immigrant status is needed to inform interventions targeting weight maintenance and management efforts for all girls.

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ASSOCIATIONS OF PERCEIVED STRESS WITH DIETARY AND WEIGHT RELATED OUTCOMES IN AFRICAN-AMERICAN ADOLESCENTS

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Limited data suggests that dietary restraint may impact eating behaviors in response to stress, such that adolescents with low dietary restraint and high stress levels may reduce their energy intake. Conversely, some studies suggest that higher adiposity may be linked to increased energy intake under high-stress. Prior studies on stress and eating behaviors, however, are limited in African American (AA) youth and have failed to account for curvilinear relationships between stress levels and dietary intake. The current study expands on previous literature by examining the associations between body mass index (zBMI), kcals, fat intake, and fruit/vegetable intake across stress levels among AA adolescents in the Families Improving Together (FIT) for Weight Loss trial. A total of 126 overweight AA adolescents (66.7% female; *M* age 12.83±1.74 yrs; *M* BMI %ile 96.65±4.13) provided baseline data from the FIT for Weight Loss trial. Adolescents completed the Cohen Perceived Stress Scale to assess stress levels, which were then categorized into low- (1 SD below the mean), medium- (mean), and high-stress groups (1 SD above the mean). Random 24-hour dietary recalls were completed on two weekdays and one weekend day to determine average kcals, fat intake, and fruit/vegetable intake. Height and weight were measured by trained staff. A MANOVA analysis demonstrated a significant overall effect of stress on dietary outcomes and zBMI ($F(8, 242)=2.02, p<0.05$). Follow-up univariate tests revealed significant effects of stress on kcals ($F(2, 123)=6.84, p<0.01$) and fat intake ($F(2, 123)=5.98, p<0.02$). Post-hoc tests indicated significant differences in kcals and fat intake, with greater intake among the medium-stress group as compared to the low-stress ($p<0.02$, for both) or high-stress group ($p<0.02$ for both). These findings are among the first to indicate a curvilinear effect of stress on dietary outcomes in AA adolescents. High-stress was associated with reduced energy intake, which is consistent with some, but not all, related studies. Future studies should assess curvilinear relationships between stress levels and dietary intake to expand our understanding of how to best address stress, eating and weight outcomes in underserved AA adolescents.

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EFFECTS OF A PILOT GUIDED IMAGERY INTERVENTION ON TEMPORAL DISCOUNTING AND FOOD DEMAND AMONG OVERWEIGHT AND OBESE ADULTS

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Background: Unhealthy dietary choices contribute to negative health outcomes, such as cancer and cardiometabolic diseases. To promote healthy food choice, interventions should target both the regulation and reward mechanisms that guide eating behavior. Episodic future thinking (EFT)—imagining personal experiences that might occur in one's future—may strengthen regulatory mechanisms by reducing unhealthy food choice and temporal discounting (i.e., valuing smaller immediate rewards over larger future rewards). Further, positive affect (PosA) related to healthy food may enhance the rewarding effects of healthy eating and strengthen the impact of EFT-anchored programs. Despite their potential synergistic effects, these processes have not been examined together. We conducted a factorial, randomized, controlled pilot intervention to test the independent and interactive effects of EFT and PosA on temporal discounting, food choice, and food demand among overweight and obese adults.

Method: Using a 2 (EFT: yes, no) x 2 (PosA: yes, no) design, we randomized 153 participants with a BMI >25 kg/m² (*M* age=31.3 years; *M* BMI=32.5; 70% female) to one of four guided imagery interventions. Participants completed surveys, then a temporal discounting task and a food demand task, which assessed food demand breakpoint (first price at which consumption was zero) and demand intensity (how much someone will consume at the price of \$0.01) for healthy and unhealthy food. Then participants listened to a brief guided imagery intervention. EFT conditions guided participants to think of a future where they have made healthy food choices. PosA conditions guided thoughts of positive feelings surrounding fruits and vegetables. Afterward, participants again completed the temporal discounting and food demand tasks, as well as a behavioral food choice task. A between-subject univariate ANOVA was conducted on all outcome indices.

Results: We found a main effect of EFT condition on unhealthy food demand for both breakpoint ($F(1, 146) = 5.448, p=.02$) and intensity ($F(1, 146) = 4.655, p=.03$). We also found a main effect of EFT condition on healthy behavioral food choices ($F(1, 152) = 6.821, p=.01$). There were no significant effects of EFT or PosA condition on temporal discounting or healthy food demand, and no interactions were significant.

Conclusions: Our findings indicate that listening to EFT guided imagery focused on visualizing future healthful choices results in a devaluation of unhealthy food and an increase in healthy food preference in the lab. Guided imagery to enhance positive associations with healthy food did not influence indices of decision-making or eating behavior. This suggests that EFT guided imagery can be targeted to address cognitive processes surrounding healthful behavior. Future research should explore scalability and dosing, and replicate findings with food decision-making outside the lab.

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EVALUATION OF THE VARYING EFFECTS OF “COMPETITIVE” FOOD AND BEVERAGE POLICY ON OBESITY AMONG UNDER-STUDIED MINORITY STUDENTS

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Background and Purpose: It is currently unknown whether California's competitive food and beverage policies (CF&B policies) were effective in reducing high prevalence of overweight/obesity among severely understudied subgroups who have high rates of obesity and chronic diseases: Pacific Islander (PI) and American Indian/Alaskan Native (AI/AN) children.

Objective: To investigate the associations between CF&B policies and overweight/obesity status among PI and AI/AN school children in California.

Methods: Using a quasi-experimental design, prevalence trends of overweight/obesity were compared between the periods of before and after CF&B enactment in California among 5th and 7th grade PI, Filipino, AI/AN and White students.

Results: Among both boys and girls, obesity was significantly increasing in the period before the California CF&B policies (2002-2005) for 5th and 7th grade White, PI and AI/AN students. In the period after policy implementation (2006-2012), there was evidence of decline in obesity prevalence among White boys in both grades, controlling for student-level variables (age, race/ethnicity, physical fitness), school factors (enrollment, and racial/ethnic composition of students within schools and percent of eligible students for free or reduced price meals), school-neighborhood socioeconomic characteristics (annual median household income and percent of residents 25 years or older who completed a sixteen or more years of education) and district-level percent of students eligible for free or reduced price meals. The rate of increase in obesity prevalence declined significantly after the policies were adopted, for AI/AN girls and boys and PI girls in both grades and PI boys in 5th grade.

Conclusions: Our study findings point to substantial differences in the association between CF&B policies and obesity by race/ethnicity. Differential effects of the CF&B policy suggest that there is a need to further assess factors contributing to these differences and to implement additional obesity prevention strategies targeting high risk subpopulations such as PI and AI/AN.

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RACISM AND SOURCES OF STRESS ASSOCIATED WITH BMI

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Body mass index (BMI) is a known predictor of mortality, with acute physiological as well as psychological causes and implications. Race and sex differences in BMI may help to explain health disparities in the US. The perception of stress and the frequency of stressors has also been associated with mortality. The connection between stress and BMI has been investigated in relation to altered or unrestrained eating patterns, but has rarely been examined in a cultural or racial context. The current study examined multiple sources of stress (daily hassles, perceived stress, racism, sexism and acculturative stress) and their associations with BMI ($M=26.56$, $SD=6.58$) in a sample of 246 university students (mean age = 21.81, $SD = 4.37$; 72% female; 47% Latinx) through an online self-report survey. Using categorical guidelines provided by the Centers for Disease Control and Prevention, 49% of the sample was classified as overweight or obese. Among participants of color ($n = 171$; 50% overweight/obese), daily hassles ($r = .19$, $p = .01$), frequency of racist events ($r = .18$, $p = .02$), stress associated with racist events ($r = .21$, $p = .006$) and acculturative stress ($r = .17$, $p = .03$) were associated with BMI, and remained after adjusting for age and income. Among female participants of color ($n = 119$; 49% overweight/obese), daily hassles ($r = .22$, $p = .02$) was associated with BMI, though perceived stress ($r = .25$, $p = .009$), hassles ($r = .28$, $p = .003$) and acculturative stress ($r = .20$, $p = .04$) were associated with BMI when adjusted for age and income. Frequency of sexist events and stress associated with sexist events were not associated with BMI. Among male participants of color ($n = 52$; 54% overweight/obese), frequency of racist events ($r = .39$, $p = .005$), stress associated with racist events ($r = .43$, $p = .002$) and acculturative stress ($r = .43$, $p = .002$) were associated with BMI, and remained after adjusting for age and income. BMI was not associated with exercise or fruit/vegetable intake, but was associated with less hours of sleep for participants of color ($r = -.16$, $p = .04$). Future weight management interventions should integrate measures to assess for racial and cultural factors that could contribute to a heightened experience of stress in overweight populations.

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THE IMPACT OF WEIGHT SUPPRESSION AND DIETARY RESTRAINT ON OUTCOMES IN AN EATING DISORDER AND OBESITY PREVENTION TRIAL

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Emerging adults are at heightened risk for excess weight gain and eating disorder (ED) pathology. Two prevention programs that focused on small, sustainable changes to eating and physical activity (one with the addition of cognitive dissonance induction) reduced both weight gain and increases in ED pathology (Stice et al., 2018). However, a subset of participants had suboptimal outcomes, necessitating research on factors that influence outcome. Weight suppression (WS; the difference between highest lifetime weight and current weight) and dietary restraint (the cognitive effort to limit food intake) predict weight gain and ED pathology in community and clinical samples, but WS has not been examined in weight gain/ED prevention programs and the limited findings on restraint in this context are mixed. This study tested the hypothesis that WS and dietary restraint would each interact with condition to predict greater weight gain and increases in ED pathology.

Participants ($N=364$) aged 17-23 years with BMIs of 18-30 kg/m² enrolled in an RCT comparing two weight gain/ED prevention programs and an educational video control reported on weight history and dietary restraint (Dutch Restrained Eating Scale) at baseline. Weight and ED symptoms (Eating Disorder Diagnostic Interview) were assessed at baseline, 6-weeks (post-intervention), 6-months, 1-year, and 2-years.

WS and dietary restraint did not interact with condition, so conditions were collapsed for subsequent analyses. In the overall sample, WS, but not dietary restraint, predicted higher weight at 1-year ($p=.03$) and, at trend-level, 2-years ($p=.08$). At 1-year, mean weight gain was 4.1 lb for those in the top quartile of WS (WS >12.5 lb) and 1.0 lb for those in the bottom quartile (WS < 2.2 lb). Dietary restraint, but not WS, predicted greater ED pathology at 6-weeks, 6-months, and 1-year ($p's < .05$). At 1-year, ED symptoms increased by 27% in the top quartile (restraint >3.3) and 18% in the bottom quartile (restraint < 2.0).

High dietary restraint predicted increases in ED pathology while high WS predicted weight gain, demonstrating that these processes may differentially relate to suboptimal outcomes in emerging adults seeking weight gain and ED prevention programs. To improve the efficacy of prevention programs, future research should explore the mechanisms through which these factors impact outcome and identify treatment strategies for individuals presenting with these characteristics.

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EFFECTS OF CHANGES IN NEIGHBORHOOD OBESOGENIC ENVIRONMENTS ON BODY WEIGHT BY MOVER STATUS: THE MULTIETHNIC COHORT STUDY

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Introduction: Neighborhood environments can change via residential relocation or changes to one's present neighborhood, potentially influencing obesity risk through lifestyle behavior change. However, the effects of neighborhood environmental changes on body weight by mover status (mover or non-mover) are unknown. Thus, this study investigated the longitudinal associations of neighborhood environmental changes with weight change by mover status among a multiethnic adult sample.

Methods: We used baseline and 10-year follow-up data from 32,530 adults (aged 45-75 years at baseline) from the Multiethnic Cohort Study, who resided in California. Questionnaires assessed socio-demographics, health, behaviors, and self-reported weight. Geocoded residential addresses were assigned scores for five block group-level composite neighborhood factors, including 4 obesogenic environment factors (mixed-land development, unhealthy food environment, parks density, and urbanicity) and socioeconomic status (nSES). Sex-stratified mixed-effects models examined associations between change in each neighborhood factor (decrease, no change, increase) and annual rate of weight change by mover status. Models accounted for person and block group-level clustering and controlled for baseline individual-level covariates and time between surveys.

Results: Over the 10-year follow-up period, the average annual rate of weight gain was higher for movers (men: 0.11 lbs/yr; women: 0.36 lbs/yr) than non-movers (men: 0.08 lbs/yr; women: 0.18 lbs/yr). Among women, those who moved to a neighborhood with a higher unhealthy food environment gained 0.17 lbs fewer/yr than those who moved to a neighborhood with a similar food environment as their baseline neighborhood ($p=0.004$). Women non-movers whose unhealthy food environment increased gained 0.10 lbs fewer/yr than those who experienced no change ($p=0.02$). Among men, non-movers whose nSES increased gained 0.09 lbs fewer/yr than those who experienced no change ($p=0.05$). There was no significant effect of nSES on weight among men movers.

Discussion: Findings suggest that the effects of neighborhood change on weight vary by mover status and sex. Our study shows that women's weight may be more sensitive to changes in available food amenities following residential relocation. Men's weight appeared to be less sensitive to environmental changes following residential relocation. These findings in women, if confirmed, would warrant implementation of environmental interventions to prevent obesity.

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INCREASED 2ND TRIMESTER PHYSICAL ACTIVITY MAY REGULATE RESTING METABOLISM AND WEIGHT GAIN IN WOMEN WITH OVERWEIGHT

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While studies show that RMR is higher in later pregnancy compared to pre-pregnancy, scant research has examined variation in RMR throughout pregnancy. The 2nd trimester is marked by rapid gestational weight gain (GWG) and fetal growth, which may increase RMR; however, the rate of change in RMR remains unclear. In addition, little research has examined modifiable factors of RMR variation, such as physical activity (PA) and energy intake (EI), which in turn, regulate GWG. These secondary analyses characterize change in RMR during the 2nd trimester and examine whether change in RMR is associated with PA, EI, and meeting GWG guidelines. Pregnant women with overweight/obesity ($N=18$) completed weekly mHealth assessments of PA (wrist-worn monitor), GWG (Wi-Fi scale), and RMR (mobile indirect calorimetry) during the 2nd trimester (T2) as part of a larger longitudinal study. EI was estimated with back calculation based on PA, weight, and RMR. Change scores for T2 PA, EI, and GWG were calculated as: week 27-week 14. Women (56%; $n=10$) were categorized as “fluctuating” RMR if their RMR increased and decreased throughout T2 and as “linear” RMR (44% $n=8$) if their RMR only increased or decreased. Women were also categorized as meeting (33%; $n=6$) or exceeding (67%; $n=12$) weekly IOM GWG guidelines (overweight: 14 weeks*0.6lbs/week; obese: 14 weeks*0.5lbs/week). One-way ANOVAs revealed women with linear RMR increased in PA ($M=41.6\text{kcal/day}$) while women with fluctuating RMR decreased ($M=-42.8\text{kcal/day}$; $p=0.03$) throughout T2. There was no significant difference in EI between RMR groups ($p=0.88$). In women with linear RMR, 38% met GWG guidelines while 62% exceeded. In women with fluctuating RMR, 30% met GWG guidelines while 70% exceeded (chi-square NS). Women with linear RMR had increased PA and a slightly higher proportion gaining within the GWG guidelines compared to women with fluctuating RMR suggesting that further research is needed to examine within-person variation in RMR as a potential modifiable factor of GWG.

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FAMILY CHECK-UP 4 HEALTH IMPROVES CHILD AND PARENT HEALTH BEHAVIORS: RESULTS OF A RANDOMIZED PEDIATRIC WEIGHT MANAGEMENT TRIAL

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Introduction: Implementing effective family-based programs in pediatric primary care to prevent excess weight gain in childhood is a critical goal set forth by the US Preventive Services Task Force. Most children access a primary care provider annually, caregivers are present and they look to pediatricians for advice on children's health. This poster presents the effects of the first randomized trial of the individually-tailored Family Check-Up 4 Health (FCU4Health), an adaptation of the evidence-based Family Check-Up program to specifically address pediatric obesity in primary care.

Method: A randomized hybrid type II Implementation-effectiveness trial was conducted in partnership with a large hospital-based outpatient clinic and four Federally Qualified Health Centers, all of whom served primarily low-income, Mexican-origin families. Families with children age 6-12 years and BMI ($\geq 85^{\text{th}}$ percentile) were recruited both during visits with their pediatrician or over the phone by a recruiter after identification via EMR query. Families completed surveys, an interaction task, and were weighed using a portable electronic body composition scale and measured using a stadiometer. Families were then randomized to services as usual ($n=99$) or to FCU4Health ($n=141$). FCU4Health was delivered as an integrated service in the clinic or via referral to an external behavioral health provider who met with the family in their home or at a community site. Intention-to-treat analyses were conducted using latent growth curve models in Mplus to test for group differences in child and caregiver behavioral and anthropometric variables, as well as family health routines, after 6-months of intervention and 6-months of follow-up.

Results: Randomization to the FCU4Health was associated with significant effects on the child's physical activity (Cohen's $d=.40$), eating behaviors ($d=.22$), food choices ($d=.20$), and hours of sleep per night ($d=.18$). Effects were also found on improving family mealtime routines ($d=.31$) and caregiver health behaviors ($d=.28$). All analyses controlled for baseline levels and BMI, gender, age, and ethnicity (of the child or caregiver depending on outcome). No significant group differences were found for child or caregiver anthropometric measures.

Conclusions: Implementing the FCU4Health in coordination with pediatric primary care shows promise for improving health behaviors that are associated with obesity in childhood. The effect sizes are likely to be conservative given that 80% of families offered the FCU4Health received any services and there was wide variation in the amount of total service hours. Thus, accounting for engagement and dose are warranted. Further, longer-term follow-up might be needed to detect intervention effects on weight and body composition given the findings of previous research using family-based interventions like the FCU4Health.

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INCLUSION OF MINORITIES AND LOW-SES INDIVIDUALS IN MINDFULNESS-BASED INTERVENTIONS FOR WEIGHT LOSS: A SYSTEMATIC REVIEW

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Background: Obesity is a leading cause of preventable death in the United States. Moreover, serious health disparities exist such that certain groups are at elevated risk for obesity and associated health consequences. For example, the prevalence of obesity is higher among Hispanics and African Americans/blacks compared to non-Hispanic whites; among lesbian and bisexual women compared to heterosexual women; and among individuals of low socioeconomic status (SES) compared to those with higher SES. A growing body of research supports mindfulness-based interventions for treating obesity. Recent reviews concluded that racial/ethnic minorities and low-SES populations have not been sufficiently included in clinical trials of mindfulness interventions addressing stress and depression. However, the extent to which priority populations have been included in mindfulness interventions for weight loss is unclear.

Method: Following PRISMA guidelines, we conducted a systematic review (searching Google Scholar, PubMed, PsycINFO, Scopus and Web of Science) to assess the extent to which groups that are most detrimentally impacted by obesity have been included in research investigating mindfulness-based interventions for weight loss. Studies were included if they were published in a peer-reviewed journal, described interventions that used mindfulness to target obesity or associated risk factors (e.g., diet, exercise, etc.) and were conducted in the U.S.

Results: Twenty-seven studies met inclusion criteria. Of these, 26 reported the proportion of participants by race/ethnicity. Across these 26 studies, 69.5% of participants were white, 20.4% were African American/black, and 3.8% were Hispanic (vs. 76.5%, 13.4% and 18.3% in the U.S. overall, respectively). Seven studies (26%) included no African-American/black and 12 (44%) included no Hispanic participants. Only one study reported sexual orientation; this study was designed to determine the efficacy of an intervention specifically for lesbian and bisexual women. Among the 13 studies that reported education level, 59.6% of participants had a college degree or more. In the four studies that reported annual household income using comparable ordinal scales, 49.7% of participants reported income of \$50,000-\$100,000, and 23.5% reported income above \$100,000. The six other studies reporting on income also indicated relatively high income levels. Over 88% of participants in the six studies that reported employment status were employed.

Conclusion: Overall, Hispanic adults and people with lower education levels were especially underrepresented in studies of mindfulness interventions for obesity. Efforts are urgently needed to include more diverse participants (particularly those from priority populations who are at disproportionate risk for adverse health consequences of obesity) in clinical trials of mindfulness interventions.

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LONG-TERM EHR-MEASURED WEIGHT CHANGES FOLLOWING A RANDOMIZED CONTROLLED TRIAL OF A WEIGHT LOSS MAINTENANCE INTERVENTION

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Background: Long-term effects of weight management interventions have rarely been documented due to lack of availability of weight measures. Weight is recorded in the electronic health record (EHR) at most medical visits, providing data for long-term analyses. Additionally, the Veterans Administration (VA) national EHR allows for all weights collected at medical visits to be obtained provided they occurred within the VA. We used EHR-recorded weight to examine long-term weight outcomes two years following completion of randomized controlled trial (RCT) of a weight loss maintenance intervention.

Methods: MAINTAIN was an RCT comparing a primarily telephone-delivered weight loss maintenance intervention (n=110) to usual care (n=112) in veterans with obesity who had lost ≥ 4 kg in a 16-week weight loss program. The RCT primary outcome of study-measured weight change 56 weeks following randomization showed a small benefit of the intervention such that those in the intervention group regained less weight (-1.6 kg; 95% CI: -0.1, -3.1) during the intervention phase than the control group. Weight at the 56-week time point served as baseline for the current analyses. EHR weights were obtained for two years following baseline. Mixed-effects models with quadratic time were fit to estimate between-arm differences in weight change.

Results: Estimated weight at trial completion was 109.7 kg for usual care and 106.8 kg for intervention; estimated difference of -2.9 kg (95% CI: -8.8, 3.0). One year post-trial completion, estimated mean weight among usual care participants was 111.4 kg and intervention participants was 108.6 kg, estimated difference -2.8 kg (95%CI: -8.6, 3.0). Two years following trial completion, estimated mean weight among usual care participants was 111.5 kg and intervention participants was 108.0 kg, estimated difference -3.4 kg (95%CI: -9.3, 2.4 kg).

Conclusions: The VA EHR was an effective tool in tracking weight changes two years following conclusion of an RCT. This work highlights the importance of identifying methods to obtain long-term weight outcomes to better understand the effectiveness of weight loss maintenance interventions. More work is needed improve and monitor long-term weight loss.

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GETTING A HEAD START ON OVERWEIGHT AND OBESITY IN PRESCHOOL-AGED CHILDREN

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The current study assessed the impact of a regional food and fitness initiative on body mass index (BMI) of preschoolers enrolled in the Northeast Iowa Head Start program. Head Start is a federal preschool program committed to promoting school readiness, overall health and wellness of children, and supportive parenting skills in child development. This study was done in collaboration with Head Start, a medical center, a college, and a regional food and fitness initiative. The initiative has run for seven years and has grown in depth and reach each year. As such, although benefits to BMI were expected in all students, it was expected that children experiencing the program in more recent years may benefit more than those experiencing the program in the earlier years. Additionally, the role of sex was examined as an important factor in BMI changes. Participants (N=1,205) were Head Start preschoolers who attended for two years between 2012-2019, and had sex and their BMI data recorded by date of measurement. Results revealed a year 1 (M=16.74, SD=2.14) to year 2 (M=16.58, SD=2.07) decrease in BMI for all students that approached statistical significance ($t=1.90$, $p=.06$, $d=0.08$). Analyses that examined the years of program deployment showed that exposure to the initiative in the early years did not differ from exposure to the initiative in later years of the program in terms of its effectiveness in reducing BMI gains ($F=1.52$, $p=.18$). Examining changes in BMI across the two years by sex revealed a statistically significant moderating effect of sex ($F=6.83$, $p=.009$) wherein a significant decrease in BMI for females from year 1 (M=16.71, SD=2.35) to year 2 (M=16.41, SD=2.16) was observed ($t=2.005$, $p=.046$, $d=.15$), but the same decrease for males from year 1 (M=16.76, SD=1.943) to year 2 (M=16.73, SD=1.986) was half the size and not statistically significant ($t=0.37$, $p=.71$, $d=0.08$). In conclusion, the food and fitness initiative showed some promise of effectiveness in reducing gains in BMI in preschool aged Head Start students. However, the results indicate that while the initiative is having a positive impact on girls' BMI, it is not having a similarly beneficial impact on boys' BMI. This raises several questions regarding food and fitness initiative content, boys' socialization, and family characteristics of boys' homes. Future research should examine how the initiative can be equally effective for both sexes.

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EXTENDED CARE FOR OBESITY MANAGEMENT: EFFECTS OF MATCHING PARTICIPANTS TO THEIR TREATMENT PREFERENCE FOR FOLLOW-UP CARE

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Introduction: Following behavioral treatment for obesity, participants commonly regain weight. Providing extended care via phone or email may reduce weight regain; however, it is unknown whether matching the mode of extended care (i.e., phone vs. email) to a participant's preference may improve weight-loss maintenance.

Methods: The study included 72 adults with obesity (female = 86%, non-Hispanic white = 68%; ($M \pm SD$) age = 54.9 ± 9.4 years; BMI = 36.4 ± 3.8 kg/m²) who participated in a 4-month behavioral weight-loss intervention followed by random assignment to a 12-month extended-care program consisting of 18 contacts delivered by phone or email. Prior to randomization, participants were asked to specify their preference for extended care via phone or email. Participants in both the email and phone conditions received written modules describing strategies to enhance weight-loss maintenance. Participants in the phone condition also had the opportunity to call into a group or individual phone session with a weight-loss interventionist to discuss the treatment modules and problem solve any obstacles to maintenance. Thus, a 2 (phone vs. email contact) X 2 (preferred vs. nonpreferred modality) factorial design was used to assess the effects of extended-care modality and participant preference, and their interaction, on weight change during the 12 months following initial weight-loss treatment.

Results: Overall weight loss following initial treatment was 8.6 ± 4.5 kg. An ANOVA on weight changes during the 12-month extended-care period indicated a significant main effect for treatment modality ($p = .01$), such that participants assigned to extended care delivered by phone demonstrated less weight regain than those in the email condition ($M_s \pm SEs = 0.3 \pm 0.9$ kg vs. 4.0 ± 1.2 kg, respectively). There was not a significant main effect for treatment preference ($p = .48$). Moreover, there was not a significant difference in weight regain for participants assigned to their preferred vs. nonpreferred treatment modality (1.6 ± 1.1 kg vs. 2.7 ± 1.0 kg, respectively, $p = .48$).

Conclusion: Collectively, these findings indicate that providing extended care via phone contact produces greater maintenance of weight loss than email contact, even among those participants who express a clear preference for extended care via email.

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COGNITION MEDIATES THE EFFECTS OF PAIN ON LOWER EXTREMITY FUNCTION IN OLDER ADULTS

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Objective: Pain is prevalent in aging and is commonly associated with deficits in physical function. Persistent pain has been associated with decrements in performance on measures of overall cognitive function. Normal aging is also known to result in gradual declines in cognition and physical function. As such, older adults who experience persistent pain are particularly vulnerable to the development of physical and functional disabilities. Beyond its direct effects on cognitive and physical function, pain can also affect physical function via its impact on cognition. However, further research is needed to identify which aspects of physical function are most reliant on this indirect effect. An improved understanding of the mediating role of general cognition on the relationship between pain status and physical function in older adults could help to reduce their risk of recurrent falls. The current study examined the mediating effect of overall cognitive function on the association between pain status and physical function. We hypothesized that individuals who reported ongoing pain and exhibited poor general cognition would be more likely to report greater physical dysfunction.

Participants and Methods: Participants (n= 383) consisted of non-demented, community-dwelling older adults (mean age= 76ys; %female= 55) who were assessed within a single clinic visit. Pain status and physical function were assessed by self-report using the Medical Outcomes Study Pain Severity Scale (MOS-PSS) and the Late-Life Function and Disability Instrument (LLFDI), respectively. Overall cognitive function was assessed using the Total Index Score of the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS).

Results: Separate mediation analyses were conducted for the following physical outcomes: basic lower extremity function, advanced lower extremity function, and upper extremity function. Cognition was found to mediate the association between pain and basic lower extremity function. Step 1 of the mediation model revealed a significant negative association between pain and basic lower extremity function ($\beta = -0.199$, $p < .001$). Step 2 showed a significant positive association between pain and cognition ($\beta = 0.105$, $p < .05$). Step 3 showed a significant positive association between cognition and self-reported lower extremity function when controlling for pain ($\beta = 0.229$, $p < .001$). Step 4 revealed that in the presence of cognition, pain was a significant predictor of lower extremity function ($\beta = -0.224$, $p < .001$), demonstrating a partial mediation effect. Separate mediation models that considered upper extremity function and advanced lower extremity function as distinct outcomes did not yield significant results.

Conclusions: General cognition mediated the relationship between pain and lower extremity function in a sample of community-residing older adults.

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THE EFFECTS OF ADDICTION ON CHRONIC MIGRAINE TREATMENT OUTCOMES

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Introduction: Dual disorder research has emphasized the importance of integrated, individualized care for comorbid substance use disorder and mental illness. However, a lack of research has addressed whether a similar standard of specialized care is needed for the co-occurrence of substance use disorder and a physical disability, such as chronic pain. With a high prevalence of substance use disorder in the chronic pain population, it is important for clinicians to recognize the effects of this comorbidity on treatment outcomes. The purpose of the current study was to examine the relationship between co-occurring substance use disorder and chronic migraine treatment outcomes.

Method: As a part of a larger study, 4502 participants with chronic migraine completed an array of self-report questionnaires related to health and treatment experiences. Chi-square tests of independence were performed to assess the relation between co-occurring substance use disorder and migraine treatment outcomes in the chronic migraine population.

Results: Chi-square tests of independence revealed that individuals with comorbid substance use disorder were more likely than those with chronic migraine alone to experience less migraines after learning how to avoid specific triggers ($\chi^2(1, N = 4502) = 4.195$, $p < .05$). The presence of co-occurring substance use disorder did not significantly associate with any other treatment outcomes.

Discussion: The results suggest that individuals with co-occurring substance use disorder and chronic migraine benefit from interventions that incorporate trigger avoidance training. To ensure optimal treatment outcomes, clinicians must assess for co-occurring substance use disorder when constructing treatment plans for chronic migraine patients. Future research should attempt to develop and test a migraine treatment protocol for patients with comorbid substance use disorder. Furthermore, additional research is needed to explore whether the presence of co-occurring chronic migraine also effects addiction treatment outcomes.

Learning Objectives

1. At the conclusion of this presentation the audience will be able to identify the impact of co-occurring substance use disorder on chronic migraine treatment outcomes.
2. This presentation will help the audience develop more effective treatment plans for patients with comorbid substance use disorder and chronic migraine.

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ETHNICITY INFLUENCES PAIN, PERIOD: ETHNIC DISPARITIES IN MENSTRUAL PAIN AND ATTITUDES

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Studies show significant differences in menstrual attitudes between women in the U.S. and those in other countries (Hoerster et al., 2008; Marván et al., 2006). However, little literature discusses ethnic differences in menstrual pain and attitudes within the U.S. (Hollingshead et al, 2016).

We surveyed 106 Latina (N=47) and Caucasian (N=59) female college students (18-27 yo). Measures included the Abdominal Pain Index (API) for dysmenorrhea, Body Appreciation Scale (BAS), Beliefs and Attitudes Toward Menstruation questionnaire (BATM), and religiosity items.

Consistent with literature in other pain domains (Campbell, 2012; Finkelstein & Eye, 1990; Marván et al., 2006), Latinas reported significantly greater pain intensity ($t(101) = 3.585, p = .001$), and a higher peak pain ($t(101) = 2.362, p = .020$). Interestingly, Latinas average pain was more intense than Caucasians' peak pain, on average. However, Latinas reported shorter duration of pain on the days they experienced menstrual pain ($t(101) = -2.02, p = .030$), though a trend to experience pain about a half day longer ($t(100) = 1.883, p = .063$). There were no significant differences between cycle length or period duration. When entered into a regression controlling for age, body appreciation, and religiosity in the first step, ethnicity was the only significant predictor of summary pain scale ($\beta = -.233, p = .041, \Delta R^2 = .043$), days in pain ($\beta = -.240, p = .032, \Delta R^2 = .049$), and remained a significant predictor (with BAS and religious activities) of peak pain ($\beta = -.273, p = .011, \Delta R^2 = .064$), and pain intensity ($\beta = -.424, p < .001, \Delta R^2 = .153$).

Beyond pain, Latinas endorsed behavioral pre/proscriptions while menstruating (e.g. not carrying heavy things, drinking tea) significantly more than Caucasians ($t(83.677) = 4.704, p < .001$). Latinas showed a trend both toward being more annoyed by their period ($t(102) = 1.818, p = .072$), yet a higher appreciation for their body ($t(101) = 1.781, p = .078$) than Caucasians; it is possible that these analyses were underpowered and would become significant with larger sample sizes. As consistent with prior literature, our sample showed Latinas were significantly more likely to report using pads ($t(100.74) = 4.922, p < .001$) and less likely to use tampons ($t(101) = -4.388, p < .001$) than Caucasians.

This study extends prior pain disparity research by examining ethnic differences and menstrual pain. Differences in pain may be due to cultural differences in pain expression, increased sensitization from systematic prejudice, medical provider skepticism, differences in coping, or neurobiological differences (Campbell, 2012). While Latinas report more pain and more behavioral prescriptions, they also trend toward greater bodily appreciation; further research should expand on these findings to best serve the diversity within women's health and understand possible cultural resilience to pain experiences.

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MERITORIOUS AWARD WINNER

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COGNITIVE, AFFECTIVE, AND NEUROENDOCRINE CORRELATES OF PAIN TRAJECTORIES IN SURVIVORS OF RECENT INTERPERSONAL VIOLENCE

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Interpersonal violence (IPV) is a major public health concern. Women are at high risk for IPV exposure, which, in turn, is associated with negative health outcomes including chronic pain. The mechanisms contributing to this increased risk are not well understood. Cognitive (e.g., catastrophizing), affective (e.g., depressive and posttraumatic stress [PTS] symptoms), and neuroendocrine (e.g., stress response system alterations) factors have been implicated in the development of chronic pain and may account, in part, for the IPV-Pain association. Three multilevel models were conducted to examine within-person relations between daily pain outcomes (i.e., McGill Pain Questionnaire short form, sensory and affective pain; PROMIS Pain Interference short form) and potential correlates of change (i.e., pain catastrophizing, depressive symptoms, PTS symptom severity, and diurnal salivary cortisol secretion). 47 young adult women completed assessments within three months of an IPV incident and at 1-, 3-, and 6-month follow-ups. Multilevel models examined predictors of pain outcome trajectories (i.e., predictor X time interactions), controlling for age and race. Pain catastrophizing interacted with time to predict both affective pain ($\beta = -.15, p = .033$) and pain interference ($\beta = -.37, p = .043$). Simple slopes revealed that women reporting *higher catastrophizing* had higher affective pain and pain interference at baseline; whereas affective pain decreased significantly over time, pain interference remained stable. Women reporting *lower catastrophizing* had low and stable affective pain but showed increases in pain interference. Depressive symptoms interacted with time to predict affective pain ($\beta = .27, p = .004$). Women reporting *higher depressive symptoms* exhibited higher affective pain at baseline and increases in affective pain over time, whereas women with *lower depressive symptoms* exhibited lower affective pain at baseline and decreases in affective pain over time. Neither PTS severity nor diurnal cortisol secretion were associated with pain or interference trajectories. No cognitive, affective, or neuroendocrine factors were associated with sensory pain. The present findings highlight the importance of psychological variables in the relationship between IPV and daily pain and suggest the possibility that psychological interventions targeting depression and pain catastrophizing could prevent pain onset and maintenance in IPV survivors.

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PAIN SELF-MANAGEMENT IN TEENS RECEIVING AN OPIOID FOR ACUTE PAIN: ASSOCIATIONS WITH PARENTAL SUBSTANCE USE AND MONITORING.

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Objective: Opioid misuse is a significant public health concern impacting adolescents. In contrast to other substances of abuse, teens are largely introduced to opioids through non-drug seeking behaviors, predominantly legitimate prescriptions. Further, little is known about substance use outcomes in these teens. The objectives here were to examine: 1) sex differences in pain and medication use in a sample of teens with opioid prescriptions for pain and 2) associations between pain, medication use, and parental substance use/monitoring.

Methods: Participants include 69 teens, (14-18 years; $M = 15.9$) from a larger longitudinal study. Participants completed 4-10 daily diaries within 10 days of receiving their prescription opioid, on prescription and over the counter (OTC) pain medication use, and pain self-management techniques. Teens also reported on perceptions of their parents' substance use, and the Parental Monitoring Questionnaire (PMQ) subscales: monitoring, solicitation, parental control, child disclosure). T-tests examined sex differences in pain and medication use; bivariate correlations examined associations between pain, medication use, and parental variables.

Results: Average pain intensity across diary days was 41.9, (0-100 NRS), with females reporting higher pain than males; $t(48) = -2.06, p = .04$. Diaries capturing the first day of this window reflected 16.9% of teens still using their prescription opioids, while 81.5% had transitioned off of their prescription opioids to OTC use. Opioid use, OTC use, parent substance use and PMQ scores did not differ by sex. Females reported using significantly more pain self-management techniques (e.g. distraction, ice, heat) than males, $t(63) = -3.12, p = .003$. There were no associations between opioid use and PMQ scores or perceived parental substance use. OTC use was correlated with two subscales of the PMQ (control $r = .38, p = .03$; disclosure; $r = .40, p = .02$). Teens reporting more substance use by their mothers reported lower PMQ monitoring ($r = -.26, p = .046$). There was no correlation between PMQ scores and paternal substance use.

Conclusions: By the initiation of the daily diary period, a majority of the youths prescribed opioids for acute pain had successfully transitioned from opioids to OTC use. A smaller, but relevant proportion of teens were still on the opioids; it is this subset of teens who we must continue to evaluate to see if/how they transition off of narcotic medication. We found some sex and family differences that may be relevant to informing how acute pain experiences are a potential entry point for encouraging non-pharmaceutical pain management behaviors in teens.

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PAIN ANXIETY SYMPTOMS SCALE – 20: MEASUREMENT INVARIANCE ACROSS RACE/ETHNICITY AND SEX

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Chronic pain affects a significant proportion of the population in the United States, causing significant disability. According to the fear-avoidance model of chronic pain, a number of psychological factors serve to maintain and exacerbate pain experience. Pain-related anxiety, or fear of pain and pain-related sensations, is one candidate mechanism that serves to maintain chronic pain. Well-validated self-report measures, including the Pain-Anxiety Symptoms Scale-20 (PASS-20), have been designed to measure pain-related anxiety, and psychometric studies have shown that this scale has good reliability, convergent, and divergent validity. Yet, to date, no work has examined measurement invariance, or how the PASS-20, may measure pain-related anxiety across race/ethnicity and sex. Given that research has shown racial and sex differences in the experience of pain, it is also possible that these differences may extend to the measurement of pain-related anxiety. Therefore, the current study explored measurement invariance of the PASS-20 across race/ethnicity and sex among 3,445 college students ($M_{age} = 21.49, SD = 4.24, 73.7\%$ female; 33.5% Hispanic, 29.3% Asian/Pacific Islander, 22.4% White, 14.8% Black/African American). Results showed that the PASS-20 showed configural and weak invariance across all race/ethnicity and sex comparisons, suggesting that the general factor structure and factor loadings for each item were invariant across race/ethnicity and sex. However, for strong invariance, there were mixed results. Hispanic compared to African American showed strong invariance, Hispanic-White, Asian-African American, and White-African American showed partial strong invariance, and Asian-White, Hispanic-Asian, and Male-Female showed no strong invariance. These results begin to shed light on differences in the measurement of pain-related anxiety across race/ethnicity and sex, and may suggest that a better understanding of the nuances of measurement of this construct may be important for treatment development.

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THE EFFECT OF A BIOMEDICAL EXPLANATION ON UNCERTAINTY AND UNPLEASANTNESS OF PAIN

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Ambiguous pain without a precise, identifiable source is associated with distress and impairment, and unexplained somatic symptoms account for half of all physician visits. A previous study found that patients sought a convincing explanation for their unexplained symptoms from their physician more than a medical intervention. Two studies evaluated whether a biomedical explanation for ambiguous pain would reduce uncertainty and whether the explanation would alter the pain experience itself. In Study 1, participants were first asked to imagine unexplained pain in a specific area of their body. They rated how certain they were about the exact cause of their pain, as well as the intensity and painfulness of their symptoms, on 7-point Likert-type scales. Participants then were randomly assigned to either a biomedical or generic explanation. They were asked to imagine that their doctor explained that their pain was caused by “specific neural receptors in the injured tissue sending signals to the pain processing centers of the brain” (biomedical explanation); or by “the body’s response to the situation it is in” (generic explanation). Participants then repeated certainty and symptom ratings. The biomedical explanation resulted in larger increases in certainty about the exact cause of their symptoms ($M_D = 1.36$, $SE=0.31$) than the generic explanation ($M_D = -0.06$, $SE=0.31$), $p = .004$. There was no difference in intensity or painfulness of symptoms. In Study 2, the generic explanation was replaced with a less detailed biomedical explanation: “the body’s response to the source of the injury”. Study 2 also added an additional primary outcome: the overall unpleasantness of the experience taking into account participants’ certainty about the cause of their symptoms. In this study, there was no difference between the original biomedical explanation ($M_D = 0.88$, $SE=0.30$) and the less detailed explanation ($M_D = 1.05$, $SE=0.30$) in change in certainty, suggesting that a biomedical explanation was sufficient to reduce uncertainty regardless of the level of detail. In addition, participants given the more detailed biomedical explanation rated the overall experience as more unpleasant, $p = .03$. Together, our findings suggest that a biomedically-oriented explanation may reduce uncertainty about the source of pain symptoms, but it does not affect the experience of pain and the overall experience may become more unpleasant.

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ASSESSING THE RELATIONSHIP BETWEEN PERCEIVED LOCI OF CONTROL AND PATIENT OUTLOOK ON MIGRAINES

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Introduction: Research examining perceived loci of control and quality of life (QOL) in migraine patients has shown relationships between internal loci of control (migraine self-management) and QOL, as well as between external loci of control (perception of physician treatment) and QOL (Grinberg & Seng, 2017). One essential aspect of QOL includes an individual’s perceptions/outlook of their position in life (Megari, 2013). We conducted this study to assess the associations between a patient’s perceived loci of control and their personal outlook on their life with migraines.

Method: 4,502 U.S. adult migraine participants completed the 2015 Migraine.com survey. 2 tests of independence were performed to assess the associations between personal migraine outlook and perceived loci of control. Migraine outlook was assessed by endorsement of positive and/or negative words associated with the participant and/or their life with migraines. Perceived loci of control ratings were assessed across multiple questions using a 7-point Likert scale. Demographic factors, including age, gender, race/ethnicity, and socioeconomic status (SES) were also assessed.

Results: 2 tests of independence on migraine outlook showed a significant relationship with both external ($2(18) = 117.3$, $p < .05$, $\phi = 0.2$) and internal ($2(18) = 182.6$, $p < .05$, $\phi = 0.2$) loci of control. Additional 2 tests showed non-significant relationships between migraine outlook and age ($2(47) = 57.2$, $p=ns$), and migraine outlook and gender ($2(1) = 0.6$, $p=ns$). Significant relationships were found between migraine outlook and race/ethnicity ($2(6) = 15.0$, $p < .05$, $\phi = 0.1$), and migraine outlook and SES ($2(4) = 21.2$, $p < .05$, $\phi = 0.1$).

Discussion: Migraine outlook showed a relationship with feelings of internal and external loci of control, as well as with race/ethnicity and SES, though effect sizes were small. Future research should examine other possible factors impacting both migraine patients’ perceived loci of control and their quality of life. Expanding the current literature on these two domains may provide useful direction for creating targeted interventions to improve patient outcomes and quality of life.

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ATTENTION TO PAIN IN CHILDREN WITH CHRONIC PAIN: A CHILD VERSION OF THE PAIN VIGILANCE AND AWARENESS QUESTIONNAIRE (PVAQ-C)

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Background/Purpose: Pain is evolutionarily primed to capture and hold attention, urging behavior to escape. In the case of chronic pain, repeated attentional interruption from pain can exacerbate pain-related catastrophizing, drive fear and avoidance behaviors, and fuel disability. Accordingly, attentional processes have become intervention targets for chronic pain disorders, including via self-management, cognitive-behavioral therapies, and computerized attentional (re)training. Despite its demonstrated importance in adult samples, and application of these treatments to children with chronic pain, there are currently no validated tools to capture self-reported attention to pain in children.

Methods: The goals of this study were to adapt the Pain Vigilance and Awareness Questionnaire (PVAQ) for use in a child sample, to preliminary examine its psychometric properties, and to assess its utility over and above a measure of general attentional capacities. We adapted the language of the original PVAQ to be more easily understood by children as young as 8 years, maintaining the overall structure and content of the original measure. In a sample of 160 children (8-18 years) recruited from chronic pain clinics across two hospital sites, we examined the factor structure, internal consistency, and criterion validity of the PVAQ-C.

Results: Like the original adult measure, the PVAQ-C demonstrated excellent internal consistency ($\alpha = .92$) and moderate-to-strong criterion validity. That is, children who reported greater attention to pain also reported greater pain catastrophizing ($r = .532, p < .001$), fear of pain ($r = .467, p < .001$), avoidance of activities ($r = .439, p < .001$), and poorer physical functioning ($r = .448, p < .001$). Pain-related attention remained a significant predictor of the child's physical functioning while controlling for demographic variables (age and gender) and the child's level of catastrophizing, fears, and avoidance behaviors, indicating the utility of this newer construct in addition to established pediatric pain measures. In addition, pain-related attention significantly predicted child outcomes independent of the child's general attention control capacities, indicating added value of a pain-specific versus a general measure of attention. Unlike the adult measure, exploratory factor analysis indicated that a one-factor solution was the best fit to the data, explaining 45.9% of the variance ($\chi^2 p < .001$).

Conclusions: The PVAQ-C shows strong indices of internal reliability and criterion validity and can be used to assess children's pain-related attention in research studies and in the clinic. Further examination of its test-retest reliability and sensitivity to change will be important to consider for use in studies examining mechanisms of treatment effects in children with chronic pain.

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EXAMINING ASSESSMENTS OF PAIN-RELATED FEAR AND ANXIETY

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Rationale: The burden of chronic pain is significant at both an individual and a systemic level in terms of its cost and impact. Indeed, chronic pain patients face a number of challenges, both physiological and psychological in nature. Psychological factors, including anxiety, fear, and avoidance, are associated with individual pain experiences and are thereby important to measure and treat in tandem with the nociceptive components of pain. The assessment of pain and its psychological comorbidities, however, remains complex. The aim of the current study was to examine the overall associative properties of the most common measures of anxiety and fear associated with pain, to determine how similar or different they are, in order to further research and treatment of chronic pain and associated conditions.

Method: Participants ($n = 72$) were patients (M age = 54.6, $SD = 11.3$; 50.7% female) recruited from the West Virginia University pain clinic who were being treated for chronic pain. The mean reported pain duration was 14.5 years ($SD = 11.6$), with 43.7% of patients reporting issues related to back pain. Patients completed a battery of questionnaires about their pain experience and associated psychological factors. Among the questionnaires were the Fear of Pain Questionnaire-9 (FPQ-9), the Pain Anxiety Symptoms Scale short form (PASS-20), and the Tampa Scale for Kinesophobia (TSK). To examine the relations among the three aforementioned instruments, Pearson correlational analyses were performed on the scale total scores as well as the subscales.

Results: The TSK total score was associated with the PASS total score ($r = .48, p < .001$), and all subscale scores of the PASS. The TSK total score was unrelated to the FPQ-9 total score ($r = .15, p = .36$), or any FPQ-9 subscale scores. The FPQ-9 total score was moderately associated with the PASS total score ($r = .30, p < .05$), and the PASS physiological anxiety subscale ($r = .31, p < .05$).

Conclusion: While each instrument examined here is designed to assess a different component of pain-related fear and anxiety, similarities exist between participants' TSK and PASS scores. The FPQ-9, however, may be measuring a unique and general component of pain-related anxiety fear that is more associated with physiological anxiety, but less related to fear of movement or reinjury.

Significance: The results of this study contribute to the general understanding of each of the instruments examined. Additional research is needed to understand how patients' scores on these questionnaires may differentially and uniquely impact their treatment needs. It is possible that psychological treatment may look different for those with a broader fear of pain, versus a specific fear of the pain associated with movement/reinjury.

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MEDITATION COMBINED WITH BRAIN STIMULATION FOR CLINICAL PAIN SEVERITY IN OLDER ADULTS WITH KNEE OSTEOARTHRITIS

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Introduction: Knee osteoarthritis (OA) is one of the most common causes of pain in older adults. Recent evidence suggests that knee OA pain is characterized by alterations in central pain processing in the brain. Two nonpharmacological pain treatments, transcranial direct current stimulation (tDCS) and mindfulness-based meditation (MBM), have been shown to improve pain-related brain function in older adults with knee OA. However, no studies have examined whether tDCS combined with MBM can reduce clinical pain in older adults with knee OA. Thus, the purpose of this study was to examine the preliminary efficacy of tDCS combined with MBM in older adults with knee OA.

Methods: Thirty participants 50-85 years old with symptomatic knee OA were randomly assigned to receive either 10 daily sessions of 2 mA tDCS combined with active MBM for 20 minutes (n=15) or sham tDCS combined with sham MBM (n=15). Ten daily sessions of 2mA tDCS with the anode electrode over the primary motor cortex and with the cathode electrode over the supraorbital region was applied daily for 2 weeks (Monday to Friday) via the Soterix 1x1 tDCS mini-CT Stimulator (Soterix Medical Inc., NY). For sham tDCS, the electrodes were placed in the identical positions as for active stimulation, but the stimulator delivered no electrical current except a 30-second ramp-up/down period at the beginning and the end to mimic somatosensory perception of active tDCS. Also, participants practiced MBM simultaneously with tDCS by a guided meditation recording through earphones on a CD player. The recording instructed participants to close their eyes, connect to the openness of one's mind, and mindfully maintain and deepen the connection through breathing with more openness and awareness. For sham MBM, the recording instructed participants to relax and take deep breaths every three minutes without the specific mindfulness-based instructions. Clinical pain severity was measured by asking participants to rate their average knee pain over the past 24 hours via Numeric Rating Scale (NRS) from 0 (no pain) to 100 (worst pain imaginable). We also evaluated the presence and severity of possible side effects of treatment at the end of each session.

Results: Participants had a mean age of 59 years (SD = 7 years), and 60% were female. The average decrease in the NRS score was 24.67 ± 12.88 in the active group and only 3.33 ± 10.63 in the sham group (Cohen's D = 1.81, $P < 0.0001$). In addition, no participants complained about serious adverse events.

Discussion/Conclusion: We demonstrated that tDCS combined with MBM significantly reduced clinical pain severity in older adults with knee OA without any serious adverse events. Future studies with larger samples and longer-term follow-up evaluations are needed to validate and extend these findings.

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DEMOGRAPHIC PREDICTORS OF ENGAGEMENT IN AN INTERNET-BASED CBT PROGRAM FOR VETERANS WITH CHRONIC LOW BACK PAIN

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Introduction: Internet-based interventions for chronic pain have demonstrated efficacy and may address access barriers to pain care. One recently published pilot trial demonstrated feasibility and preliminary efficacy of a cognitive behavioral Internet-delivered self-management intervention for veterans with chronic low back, named Pain EASE. The objective of this study was to examine race, gender, and age as predictors of engagement in Pain EASE.

Methods: Participants were veterans enrolled in a 10 week trial of a self-directed, internet-based cognitive behavioral intervention for chronic low back pain (i.e., the Pain EASE program). Pain EASE includes a self-assessment, 10 pain coping skills training modules, tools for monitoring pain intensity, sleep quality, and activity, and links to additional resources. Participants received 10 weekly check-in phone calls with study staff to collect some data elements. Engagement variables examined were: number of days logged in, modules accessed, use of self-monitoring tools, and number of completed check-in phone calls. Descriptive statistics, t-tests, nonparametric statistics, and linear regression were used to describe the study sample and engagement and to examine demographic predictors of engagement.

Results: 57 veterans (93% male, 61% White, mean age = 54) were included in analyses. Because the engagement variables were not normally distributed, medians were used for sample description and analyses. Veterans logged into the program for a median of 3 days total, accessed a median of 3/10 modules, and used self-monitoring tools a median of 0 days, overall. Non-white participants compared to White participants logged into the program on fewer days ($Mdn = 1$ vs $Mdn = 3$, $p = 0.01$), accessed fewer modules ($Mdn = 1$ vs $Mdn = 2$, $p < 0.01$) and were less likely to self-monitor ($Mdn = 0$ vs $Mdn = 1$, $p < 0.01$). Veterans completed an average of 5/10 calls (normally-distributed data). There was no significant difference between Non-White and White veterans in number of completed phone check-ins ($M = 5.11$ vs. $M = 5.81$, $p = 0.46$). Linear regression revealed significant positive relationships between age and number of days logged in ($F(1,55) = 7.12$, $p = 0.01$, $R^2 = 0.12$) and between age and number of modules accessed ($F(1,55) = 4.80$, $p = 0.03$, $R^2 = 0.08$). Age was not significantly related to other engagement variables. Gender was not significantly related to any of the engagement variables.

Conclusions: Non-white veterans with chronic pain demonstrated significantly less engagement with the Pain EASE program than White veterans. Older age was significantly related to increased engagement. Results were consistent with research on engagement in internet-based programs for other health problems, although data for pain programs are limited. The findings encourage further modification of Pain EASE to be more appealing to younger and racial/ethnic minority veterans.

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EXAMINING INSOMNIA, PAIN SEVERITY, AND COPING STRATEGIES IN ETHNIC/RACIAL GROUPS WITH/AT RISK FOR KNEE OSTEOARTHRITIS.

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Background: Knee osteoarthritis (OA) is a degenerative, debilitating condition affecting functional mobility, pain, and quality of life. Factors contributing to health outcomes in knee OA populations include poor sleep quality and pain coping strategies. Cross-sectional studies have demonstrated significant associations among poor sleep quality and higher OA-related pain severity and fatigue; however, the extent to which associations among knee pain, sleep, and coping differ across ethnic/race groups remains unclear. The overall aim of this study was to examine associations among knee pain severity, insomnia severity, and pain coping strategies in non-Hispanic Black and non-Hispanic White adults with/at risk for knee OA. We hypothesized that (1) (NHB) participants would report greater insomnia, pain severity, and catastrophizing compared to NHW participants, and (2) the magnitude of correlations among pain, insomnia and pain coping would be different between ethnic/race groups.

Methods: We conducted a cross-sectional study of adults with/at risk for knee OA using community and clinic-based recruitment from two study sites both in the Southeastern United States. All participants (N = 188) provided sociodemographic data prior to completing the following validated measures: WOMAC, Insomnia Severity Index, Coping Strategies Questionnaire, and PROMIS-Anxiety and Depression.

Results: Mean age was 58 years; 37% were men and 63% women; 52% were NHB and 48% NHW. In an adjusted model controlling for anxiety, depression, and sleep medication use, results revealed that NHB reported significantly greater insomnia ($p = .015$), pain severity ($p < .001$), and catastrophizing ($p = .03$) than NHW. For both ethnic/race groups, greater insomnia severity was significantly associated with greater pain severity ($p < .001$) and catastrophizing ($p < .001$) but was not significantly associated with any adaptive coping strategies. The association between insomnia severity and catastrophizing was significantly stronger for NHW compared to NHB ($p = .03$).

Discussion: Previous literature has suggested that up to 81% of knee OA patients experience symptoms of problematic sleep, including insomnia. Results of this study suggest that NHB adults with/at risk for knee OA may be particularly vulnerable to experiencing greater insomnia and pain severity. Evidence-based behavioral pain management interventions that also address sleep may be beneficial for NHB adults with knee pain associated with OA.

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EXAMINING THE MODERATING EFFECTS OF CANNABIS USE ON PHYSICAL ACTIVITY AND MOOD IN INDIVIDUALS WITH CHRONIC PAIN.

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Objective: Recently there has been growing research and public interest in the health risks and benefits of cannabis use, including its links to physical functioning and mood. The aim of this study was to explore links between physical activity, cannabis use, and positive affect among a sample of young adult recreational cannabis users with chronic pain. We expected that greater participation in physical activity would be associated with more positive affect, but that increased frequency of cannabis use would act as a moderator reducing the significance of the relationship.

Methods: Participants (ages 18-29, 63% female) included 90 community-dwelling young adult cannabis users with chronic pain (defined as moderate or higher intensity pain of at least 3 months duration). All participants completed a set of questionnaires assessing their pain, levels of physical activity, mood state, and frequency of cannabis use. Bootstrap moderation models were conducted using the PROCESS macro.

Results: The vast majority of the sample (83%) reported using cannabis at least once per day and approximately half (53%) reported that their chronic pain was associated with significant activity limitations. Pain locations were predominantly musculoskeletal, though the vast majority of participants reported pain in across multiple locations and body regions. Within the total sample, higher physical activity was positively associated with positive mood ($r = .36$, $p < .001$), and frequency of cannabis use moderated this relationship ($b = -.0009$, 95% CI $[-.0016, -.0002]$, $t = -2.57$, $p = .01$). Positive mood was significantly related to physical activity when cannabis use was low and at the mean value ($p < .001$) but not at high levels of cannabis use ($p = .21$).

Conclusions and future directions: Participating in leisure physical activity is associated with positive mood in those with chronic pain; however, and this relationship may be dampened by more frequent cannabis use. Further investigation is warranted to determine whether and how cannabis affects physical activity and mood in young adults with and without chronic pain. Physical activity is an important component of treatment for young people in pain, and there may be a transactional relationship between engagement in physical activity and positive mood. If frequent cannabis use dampens that relationship, users with pain may be less likely to engage in physical activity over time. This remains to be tested.

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BODY MASS AND ANXIETY SENSITIVITY PREDICT PERCEIVED EXERTION DURING EXERCISE AMONG INDIVIDUALS WITH OBESITY

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Background: Regular physical exercise is important for individuals attempting weight loss, but some individuals with obesity are less likely to engage in exercise. Anxiety sensitivity (AS; i.e., fear of experiencing anxiety and its associated symptoms) is associated with higher ratings of perceived exertion (RPE) during acute exercise among treatment-seeking smokers. This study was designed to determine the extent to which BMI and AS predict RPE during exercise among individuals with obesity.

Methods: Forty-five individuals with obesity attempting to lose weight (mean age = 44.6±14.7 years; mean BMI = 39.2±6.2; 8 males) participated in two sessions (i.e. exercise and rest) approximately one week apart. Order of sessions was randomly assigned. During the exercise session, participants exercised on a treadmill for twenty minutes at moderate intensity; and during the rest session, participants read quietly for twenty minutes. Participants provided RPE at four-minute intervals during both sessions. Participants also completed the Anxiety Sensitivity Index – 3 (ASI-3), and had height and weight measured to calculate BMI. Residualized peak RPE scores represented the difference between peak RPE and predicted peak RPE during both exercise and reading sessions. Hierarchical regression analyses were performed predicting peak RPE scores in the exercise condition, controlling for peak RPE during reading. It was hypothesized that higher BMI and greater AS would predict higher peak RPE during exercise.

Results: Main effects were observed for BMI and AS, with higher BMI ($\beta = .89$, $p = .002$) and greater AS ($\beta = 3.21$, $p = .007$) associated with higher RPE during exercise. Also, there was a significant interaction of BMI and AS ($\beta = -3.27$, $p = .007$), but surprisingly, higher BMI and greater AS predicted lower peak RPE during exercise.

Conclusions: Lower RPE in the presence of higher BMI and greater AS may reflect reduced sensitivity to exertion during exercise among individuals with extreme obesity. However, lower BMI with greater AS was associated with higher RPE during exercise. Because heightened RPE may impair efforts to increase physical activity, individuals with less extreme obesity and greater AS may benefit from skills to help improve tolerance of exercise-related exertion.

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THE EFFECTS OF AN URBAN FOREST HEALTH INTERVENTION PROGRAM ON PHYSICAL ACTIVITY AMONG ADOLESCENTS

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Background: At-risk adolescents have been defined as youth who are or might be in physical, mental, or emotional danger. An Urban Forest Health Intervention Program (UFHIP) was formed at a center for at-risk adolescents in Israel, in order to promote physical activity and reduce risky behavior.

Objective: To evaluate the intervention's effect on physical activity, smoking, alcohol consumption, psychosomatic symptoms, and life satisfaction.

Methods: From 2015 to 2016, at-risk youth were nonrandomly selected to participate in the UFHIP. Questionnaires were administered to both intervention and control groups before and after the intervention. Univariate and multivariable analyses evaluated the intervention's effect.

Results: The study participants ($n=53$) showed 0.81 more sessions per week of 60 min of physical activity than did the control group ($n = 23$; $p = 0.003$). Among the intervention group, smoking frequency reduced from a mean of 2.60 ($SD = 1.30$) to 1.72 ($SD = 1.08$), whereas that in the control group increased from 3.17 (1.03) to 3.39 (1.03). In both groups, there was a reduction in alcohol consumption, with a greater change among intervention participants: -1.08 ($SD = 1.30$), compared with -0.09 ($SD = 1.79$) in the control group.

Conclusions: Findings indicate that the environmental intervention was efficacious in increasing physical activity and reducing risky behaviors among youth. The effectiveness of this intervention among larger samples is warranted in future prospective studies.

Keywords: urban forest; at-risk youth; risky behavior; physical activity; intervention; psychosomatic symptoms; life satisfaction

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THE ELECTRONIC COMMUNITY PARK AUDIT (ECPAT) SYSTEM: A STAKEHOLDER VALUE ASSESSMENT OF PARK RESOURCE TECHNOLOGY

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Parks are key physical activity (PA) behavior settings that confer numerous health benefits. However, maximizing this potential requires an accurate understanding of the current state of parks, and tools to connect stakeholders with these important public health resources. The purposes of this study were to describe a unique National Institutes of Health Small Business Technology Transfer (STTR)-funded collaboration of a small business and multiple public and academic partners to develop innovative technologies for improving and promoting community park resources, and report findings from a stakeholder value assessment of the resulting electronic Community Park Audit Tool (eCPAT) System with expert end users. Researchers from multiple disciplines partnered with a technology company (EnQ) to develop the eCPAT System, a comprehensive set of mobile technologies for collecting, sharing, managing, and promoting park information. The eCPAT System consists of a park audit mobile application, secure server and database, public searchable website with map-based visualization of park information, and client-facing web interface to view, modify, and export data. Guided by researchers, stakeholder assessment data of the eCPAT System were collected in Summer 2019 by a technology consulting firm. Diverse end users (e.g., PA researchers, parks and recreation professionals; n=9) were interviewed via phone to assess technology needs, preferences, barriers, and product value. The majority expressed a need for eCPAT technology in the commercial marketplace, with importance placed on collecting and reporting park data to demonstrate funding needs, track improvements, allocate resources, and share with policymakers. Preferences included mobile data collection, report generating, benchmarking against other agencies, customizing questions, and integration of eCPAT with other technologies. Challenges included staff training, merging datasets, and lack of funding for park initiatives. The eCPAT System represents strategic partnerships from diverse sectors to provide valid and innovative tools for PA and health promotion. End users found value in the eCPAT System stating that data allow them to compete for funds and justify expenditures. Results inform ongoing efforts to advance park PA resources. Future steps include integration of eCPAT in park prescriptions initiatives, real estate decision-making, ongoing research studies, and citizen-science efforts to advance the value of parks in promoting PA and public health.

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THE SELF-AS-DOER IDENTITY: PREDICTING PHYSICAL ACTIVITY ABOVE AND BEYOND SOCIAL COGNITIVE AND SELF-DETERMINATION THEORIES

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Introduction: Physical activity (PA) is associated with many benefits including reduced disease risk, better sleep, and improved mental and physical health. Yet only 53.3% of adults are meeting the recommended guidelines for PA (CDC, 2018). Psychosocial interventions based on theoretical models like the social cognitive theory (SCT) and self-determination theory (e.g., intrinsic and controlled motivation) have had success in predicting PA, but some variability in the degree to which PA is adopted and maintained still exists. A recently developed construct, the self-as-doer identity, may provide additional insight. The self-as-doer identity is a motivational identity which describes an individual in terms of identification with *doing* a behavior. The self-as-doer has been found to predict PA, but whether it can predict PA beyond existing theories is yet untested. Therefore, it was hypothesized that the self-as-doer identity would predict both moderate and vigorous PA above and beyond variables from SCT and self-determination theories.

Methods: Sixty undergraduates ($M_{age}=20.66$, $SD=3.87$) completed a survey assessing physical activity, self-regulation, outcome expectancies, self-efficacy, motivation, and self-as-doer identity. A hierarchical linear regression model was conducted to determine if self-as-doer identity predicted moderate and vigorous PA above and beyond SCT and self-determination variables.

Results: Self-as-doer identity predicted an additional 4.4% of the variance in vigorous PA over and above the SCT variables and control and intrinsic motivation, ($\Delta R^2=.044$, $F(1,47)=5.90$, $p=.02$). It was not, however, a predictor of moderate PA ($\Delta R^2=.02$, $F(1,47)=1.77$, $p=.19$).

Discussion: The self-as-doer identity contributes unique variance in PA behaviors, especially vigorous PA, and may serve as an additional intervention for promoting the enactment and maintenance of PA behaviors. The self-as-doer identity did not predict moderate PA behaviors (e.g., brisk walking). It may be that moderate PA behaviors have fewer barriers to overcome and may not require the additional motivation provided by the doer identity to enact. The universal nature of the self-as-doer identity makes it easily translatable to other health behaviors like healthy eating, but more research is needed to determine these relationships as well as the causal effects of the doer identity on health behaviors.

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PARENT PHYSICAL ACTIVITY IS NOT RELATED TO PHYSICAL ACTIVITY OF ADOLESCENTS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES.

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Background: Levels of moderate-to-vigorous physical activity (MVPA) are low in both typically developing adolescents and adolescents with intellectual and developmental disabilities (IDD). Intervention strategies are needed to increase MVPA in adolescents with IDD. Interventions to increase MVPA by targeting parental MVPA have been the subject of an increasing body of research. In typically developing adolescents, accelerometer derived measures of physical activity have found that parents' MVPA predicts MVPA of their children. However, this relationship has never been examined in adolescents with IDD, who have unique barriers to MVPA. The purpose of this analysis was to examine the relationship between parental and adolescent MVPA in adolescents with IDD.

Methods: To assess physical activity levels, adolescents (ages 10-21) with IDD and a parent were instructed to wear an ActiGraph Model GT3+ (ActiGraph LLC, Pensacola, FL) for 7 consecutive days. Accelerometer data was collected in 1-min epochs with a minimum of 8 hours constituting a valid monitored day. Participants with less than 3 valid days were excluded from the accelerometer data analysis. The average number of minutes/day in MVPA were calculated using a custom software program developed by our group. The Freedson intensity cut-points were used in individuals >18 years of age and the Troiano intensity cut-points were used for individuals ≤ 18 years of age.

Results: Accelerometer data was collected from 53 adolescents with IDD (~16 yrs of age, 53% female) and a parent (~48 yrs of age, 93% female). Thirty-nine adolescents and 42 parents had at least 3 valid days and were included in our analysis. Adolescents obtained 22.2 ± 25.4 minutes of MVPA per day and parents obtained 13.7 ± 13.8 minutes of MVPA per day. There was no significant correlation between parent and adolescent MVPA ($r=0.112$, $p=0.5138$). Additionally, age ($p=0.137$), sex ($p=0.940$), and parent's employment status ($p=0.926$) were not associated with the relationship between parent and adolescent MVPA.

Discussion: Adolescents with IDD obtained 37% of the recommended 60 minutes of MVPA per day. These low levels of MVPA adds to the evidence that interventions in adolescents with IDD are warranted. Unlike the typically developing population, parental MVPA does not appear to predict MVPA in adolescents with IDD. Thus, physical activity interventions should target adolescents with IDD themselves, and not just the parent.

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DIFFERENCES IN RESISTANCE TRAINING AND PERCEIVED BARRIERS TO PHYSICAL ACTIVITY AMONG LGBTQ AND NON-LGBTQ COLLEGE STUDENTS

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Purpose: Health disparities in rates of chronic disease exist for adult members of the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community across the lifespan. Lifestyle health behaviors, including engaging in sufficient physical activity (PA) and exercise (EX), are known to prevent chronic diseases, especially if adopted earlier in life; however, little is known about PA/EX behaviors in the LGBTQ population. Thus, the aim of this study was to compare PA/EX behaviors, and related perceived benefits and barriers, in LGBTQ and non-LGBTQ college student cohorts.

Methods: Self-identified LGBTQ ($n = 54$; 19.7 ± 1.4 yo) and non-LGBTQ college students ($n = 286$; 20.2 ± 1.3 yo) completed online surveys: a) Exercise Benefits and Barriers Scale (EBBS) and b) International Physical Activity Questionnaire (IPAQ) with subsequent MET-min/wk and days of resistance training (RT) scores being calculated. T-tests were used to compare PA levels and EBBS scores of LGBTQ and non-LGBTQ students.

Results: Regarding PA, there were no differences in MET-min/wk for LGBTQ and non-LGBTQ students (2376.5 ± 1626.8 vs. 2722.8 ± 1610.5 ; $p = 0.149$); however, LGBTQ students reported significantly fewer days of RT than non-LGBTQ students (1.5 ± 1.9 vs 2.1 ± 2.0 , respectively; $p = 0.047$). Total EBBS scores were 4.4% lower among LGBTQ students while Barriers scale scores were 12.8% higher than non-LGBTQ students ($p = 0.005$ and $p < 0.001$, respectively), indicating less positive perceptions of, and higher perceived barriers to PA in this group. Further, compared to non-LGBTQ students, LGBTQ students reported higher perceived barriers scores on the Exercise Milieu, Time Expenditure, and Physical Exertion sub-scales of the EBBS ($p < 0.001$; $p = 0.012$; and $p = 0.012$, respectively), suggesting these as areas of particular concern.

Conclusion: College student members of the LGBTQ community report more barriers to PA/EX than their non-LGBTQ counterparts. This research highlights the presence of unique needs of college-aged LGBTQ individuals for promotion of PA/EX by addressing such barriers. Further research may be necessary to fully understand the context of these barriers and inform program development toward the end of increased participation in PA/EX, specifically RT, among LGBTQ college students.

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WOMEN'S ACTIVE LIVING FOR KOREANS PILOT STUDY USING MOBILE TECHNOLOGIES TO PROMOTE PHYSICAL ACTIVITY AND SOCIAL NETWORKING

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Background: The risk of metabolic syndrome has significantly increased among Korean Americans (KAs) due to the adoption of unhealthy westernized lifestyle habits. Lifestyle modification including regular physical activity (PA) reduces the risk of metabolic syndrome, but little research has been done among KAs. In addition, lack of physical activity is prevalent among KAs, especially, women. Thus, a lifestyle program called Women's Active Living for Koreans (WALK) was developed and tested in a pilot randomized controlled trial with 40 physically inactive KA women in the San Francisco Bay Area. The purpose of the study was to examine the feasibility and acceptability of WALK.

Methods: A community advisory board (CAB) was formed of 8 KA women with diverse backgrounds who represent different community organizations. The CAB provided feedback on study procedures and recruitment strategies before the trial started, and on study findings at the conclusion of the trial. Participant inclusion criteria were: 1) self-identified KA women; 2) sedentary lifestyle at work and/or during leisure time defined by the Stanford Brief Physical Activity Survey; 3) 40-69 years old; 4) intention to be physically active defined by the Physical Activity Stages of Change; and 5) having a smartphone compatible with KakaoTalk, a popular mobile messaging application among Koreans. Forty women (mean age=48.4 ± 6.3 years) were randomized to one of two groups, WALK-plus and WALK-regular. Both conditions included an in-person session, handout regarding metabolic syndrome and its management, weekly challenge sheets, and an accelerometer (Fitbit Zip). Only women assigned to the WALK-plus group were invited to a closed online community via NAVER BAND, a popular social media app among Koreans and posted comments on the research team's and other participants' posts and encouraged other to increase PA.

Results: All WALK-plus group women joined closed online communities and nearly everyone (95%) posted at least once during the 4-week study period. Thirty-seven women (93%) completed the post-test visit. More than 3 in 4 (78%) used Fitbit at least 70% of the time for 4 weeks. Majority of women (90%) of the WALK-plus group (n=20) reported that BAND-related activities were helpful in increasing their PA. Thirty-nine women completed the usability questions and all of them responded that the WALK program was helpful in increasing PA and they would recommend it to other women like them. All women reported having an in-person meeting and use of Fitbit helpful.

Conclusion: Overall, the WALK program was feasible and acceptable among KA women. Most of the WALK-plus participants were highly engaged in online social networking despite of the moderate assignments requested for the participants. We should investigate how to build online social networks among KA women and what components should be included to form online communities to promote PA.

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A SYSTEMATIC REVIEW OF THE RELATIONSHIPS BETWEEN PHYSICAL ACTIVITY AND SLEEP IN YOUTH

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Background: In adults, higher levels of physical activity are associated with better sleep outcomes, and more or better quality of sleep is associated with higher levels of physical activity. However, there is not yet a consensus of the influence of sleep on physical activity outcomes or physical activity on sleep outcomes in childhood.

Purpose: The aim of this systematic review was to examine the relationships between physical activity and sleep in children and adolescents.

Methods: A systematic literature search was conducted with a predefined list of keywords in PubMed, PsycINFO, and Web of Science for articles published between January 1, 1980 and July 15, 2019. Articles were included if participants were under 18 years, published in English, and used an observational (cross-sectional, cohort, and case-control) or experimental (acute bout or intervention) study design. Articles were excluded if participants were mostly or only adults, primarily a clinical population (e.g., diagnosed sleep or cardiometabolic disorders), or the study design was a case study or case series report. The GRADE framework was used to assess study quality.

Results: A total of 111 studies (conducted in 36 countries), from 99 articles met the inclusion criteria. Fifty-eight out of the 111 studies examined physical activity or fitness exposures with sleep outcomes (n = 37 cross-sectional, 4 longitudinal, 1 acute bout experimental, and 16 intervention experimental). Among the 58 studies with sleep outcomes, 16, 23, 16, and 3 reported favorable, mixed, null, and negative findings, respectively. Fifty-three studies examined sleep exposures with physical activity or fitness outcomes (n = 32 cross-sectional, 4 longitudinal, 4 acute bout experimental, and 13 intervention experimental). Among the 53/111 studies on physical activity and fitness outcomes, 14, 20, and 19 reported favorable, mixed, and null findings, respectively. Most studies included preadolescents (n = 56) and adolescents (n = 60), while fewer included infants (n = 5), toddlers (n = 8), and preschoolers (n = 22). Across study designs and outcomes, quality of evidence ranged from very low to high.

Conclusions: Although there is some evidence of interactive relationships between sleep and physical activity in youth, the high prevalence of mixed and null results could be related to study limitations. Additional higher quality studies and more studies in early childhood are needed.

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“WE’RE ALL IN THE SAME BOAT TOGETHER”: EXPLORING QUALITY PARTICIPATION IN DRAGON BOAT TEAMS FOR BREAST CANCER SURVIVORS

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Dragon boat is suitable for breast cancer survivors as it is associated with increased social support and wellbeing and offers an opportunity for increase physical activity (PA; quantity participation). However, quality participation experiences in PA have yet to be explored systematically in breast cancer survivors. Quality participation is one’s subjective perceptions and experiences in PA. A conceptual framework to promote a quality experience has been developed in the parasport context. The framework identified elements (i.e., autonomy, belongingness, challenge, engagement, mastery and meaning) and conditions (i.e., physical environment, within the activity and social environment) to foster quality participation. While there is evidence to suggest that dragon boat may offer a quality experience, a systematic approach exploring it is needed.

Purpose: (a) to explore strategies that are used to foster elements of quality participation in dragon boat teams for breast cancer survivors and (b) to understand the context in which these strategies are implemented within these teams (i.e., conditions).

Methods: The study used a sequential mixed-methods study design with an online questionnaire followed by a structured interview. Coaches and team leaders ($N=11$; collectively “leaders”), were recruited from seven dragon boat programs for breast cancer survivors in Ontario, Canada. Transcripts were inductively thematically analyzed and then deductively mapped onto the quality participation framework. A constructivist paradigm was adopted to acknowledge multiple realities within the different dragon boat teams.

Results: Several strategies mapped onto the original framework; however, definitions were revised to suit the current context. Leaders fostered quality participation through challenge, mastery, and the social and physical environments. Some strategies included creating friendly competition, using social media to celebrate success and mentorship opportunities. Strategies that did not map onto the framework, included dragon boat providing an opportunity to feel validated, to be in nature (physical environment) and aspects of the sport specifically related to breast cancer (within the activity).

Discussion: Through leaders’ experiences, a clearer understanding of the quality participation framework within the breast cancer context has developed. Future research can explore and test strategies identified from the study for consistency and relative importance.

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24-HOUR MOVEMENT BEHAVIORS: DYNAMICS OF SLEEP, SEDENTARY BEHAVIOR AND MVPA ON SCHOOL VS. NON-SCHOOL DAYS.

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Background: Sleep, physical activity and sedentary behavior exist on an interdependent 24-hour movement continuum that mutually influences health. Studies examining movement behaviors on school days compared to non-school days have often examined these behaviors separately, ignoring their interrelated nature (i.e. MVPA accounting for sleep/sedentary) and dynamics (i.e. the impact of previous day behavior on current behavior). Neglecting components of the movement continuum such as sleep and sedentary time, and the interrelated dynamics within-individuals, limits our ability to optimize the health benefits of movement behaviors. This study examines the impact of school day (v. non-school day) on behaviors across the movement continuum.

Methods: Time series data from Fitbits (Charge-2) were collected from 196 children over 6,642 days as part of a larger school-based study. The sample was 53% female, 5-10yrs; zBMI $M = 0.75$ ($SD = 1.2$). Dynamic Structural Equation Modeling was used to simultaneously examine the effects of school on 24-hour movement behaviors (sleep, sedentary behavior and MVPA) accounting for previous day’s behavior.

Results: Within participant analysis showed that on a school day, any given child generally (1) slept less ($\beta = -.17$, 95%CI $-.21$ to $-.13$), (2) was less sedentary ($\beta = -.05$, 95%CI $-.09$ to $-.02$), and (3) did not have a significant change in MVPA ($\beta = -.05$, 95%CI $-.11$ to $.00$) compared to their own behavior on a non-school day. Between participant analysis showed that children with higher zBMI experienced a relatively larger decrease in sedentary behavior on their school days ($\beta = -.41$, 95%CI $-.64$ to $-.13$). Compared to more active children, children with lower overall levels of MVPA accumulated more MVPA on their school days compared to their non-school days ($\beta = -.41$, 95%CI $-.64$ to $-.13$).

Conclusions: Movement patterns among school age children differ on school v. non-school days. The magnitude of the associations between school day and movement behaviors is related to average MVPA and zBMI. The finding that, on school days, children with higher zBMI had an ever greater reduction in sedentary behavior (compared to kids with lower zBMI), and children who were less active compared to their peers accumulated more MVPA on school days, may indicate that the regulated and consistent (i.e., structured) environment afforded by school is most beneficial for children at the highest risk for overweight or obesity.

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SENIOR CENTER DIRECTORS' PERCEPTIONS OF THE SUSTAINABILITY OF BAILAMOS™ DANCE PROGRAM

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Prior research indicates the need for community-based physical activity (PA) programs for older Latino adults. Older Latinos participate in less leisure-time PA compared to non-Latino Whites and Blacks. Addressing barriers to the sustainability of PA programs might increase PA access. We aimed to identify and describe the perceived positive and negative aspects and the sustainability factors of the BAILAMOS™ dance program.

Methods: BAILAMOS™ was implemented in 12 centers (senior, community, and church-based) in the Chicago area. Participants were 333 older Latinos (≥ 55 years old) randomized to the BAILAMOS™ (n = 166) or health education (n = 167) group. BAILAMOS™ participants attended twice a week dance classes (merengue, bachata, cha-cha-cha, and salsa) in a four-month adoption phase led by a professional dance instructor and a four-month maintenance phase. Participants were trained by the instructor to lead the classes in the four-month maintenance phase. After maintenance, we conducted semi-structured interviews with senior center directors at one-month post-maintenance completion (n=10), and six-month post-maintenance completion (n=9). Two directors at one- and three at six-month post-maintenance had schedule conflicts or declined to participate. Questions focused on sustainability, positive, and negative aspects of the program. Interviews were audio-recorded, transcribed, and analyzed using a thematic analysis approach.

Results: At one-month post-maintenance, seven centers had ongoing peer-led dance classes as a result of BAILAMOS™. At six-month post-maintenance, five centers had ongoing peer-led dance classes. Findings from the interviews indicated that sustainability factors at one- and six-month post-maintenance included: effective instruction, available and convenient environment, interest/enjoyment, social interaction, and perceived benefits. Key factors for program discontinuation included: competing activities, undesirable weather, and lack of leadership. Positive aspects of BAILAMOS™ included: age- and culturally-relevant activity, enjoyable PA, and social interaction. Negative aspects included: lack of instruction and participant disinterest over time.

Conclusions: Offering instructor-led, age- and culturally-relevant PA were pivotal to create a sustainable program for older Latinos. These findings can help researchers and community centers design and offer sustainable programs to improve older Latinos' overall health.

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MODERATING EFFECTS OF SOCIAL SUPPORT AND STRESS ON PHYSICAL ACTIVITY IN AFRICAN-AMERICAN WOMEN

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In the US, African-American women participate in less physical activity (PA), have higher rates of chronic disease, and report higher perceived chronic stress relative to other race and sex demographic groups. Lack of adherence to a PA routine may be associated with high levels of perceived stress. Thus, the purpose of the present study was to test a stress buffering hypothesis on PA engagement in African American women. The stress buffering hypothesis purports that the presence of social support should buffer the negative effects of stress, but only under high stress conditions. The current study examined a moderating relationship of perceived stress and perceived social support on moderate-to-vigorous physical activity (MVPA) in African-American women. Based on the stress-buffering hypothesis, the current study tested the hypothesis that social support would buffer the negative effects of perceived stress on MVPA under high, but not low, stress conditions. Participants were 114 female African-American caregivers with a mean age of 44.60 years (SD=8.45) and an average BMI of 37.96 (SD=8.11) enrolled in the Families Improving Together for Weight Loss Trial. The Perceived Stress Scale (PSS) was used to assess caregiver perceived stress and has demonstrated validity in African-Americans. The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess social support and has demonstrated validity in African-Americans. Average daily minutes of MVPA was assessed via 7-day accelerometers estimates. A hierarchical linear regression, controlling for demographic data, was significant and explained a significant portion of the variance in MVPA ($R^2 = 0.27$, $F(8, 118) = 5.23$, $p < 0.001$). The stress-by-social support interaction term in the model ($\beta = 0.28$, $p < 0.001$) demonstrated significant effects and indicated that perceived stress and perceived social support have a moderating effect on MVPA. Simple slope analyses showed that under low stress, social support was not significantly associated with MVPA ($t = -1.97$, $SE = 0.11$, $p = 0.06$), however, under high levels of stress, social support was positively associated with MVPA ($t = 2.12$, $SE = 0.15$, $p = 0.03$). Findings highlight the importance of integrating constructs of stress and social support into future intervention programs for African American women.

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PREDICTORS OF PHYSICAL ACTIVITY IN CANCER SURVIVORS: META-ANALYSIS AND META-ANALYTIC STRUCTURAL EQUATION MODELING OF STUDIES

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Objective: The purpose of this project is to understand psychosocial predictors of physical activity among cancer survivors. Through meta-analyses and meta-analytic structural equation modeling, the following is presented: (1) quantification of associations between psychosocial predictors and physical activity, (2) a model of how psychosocial predictors combine to influence physical activity, and (3) an exploration of study, demographic, and clinical characteristics that moderate associations.

Methods: This project was registered in Prospero and conducted according to PRISMA guidelines. Systematic literature searches were conducted by a medical librarian in PubMed, Web of Science, Embase, SportDiscus, PsycInfo, and CINAHL. Search terms for psychosocial constructs, physical activity, cancer, and longitudinal design were used. Initial search yielding 2,431 records were reviewed for inclusion. Those that used a longitudinal, observational design, included a sample of cancer survivors, and measured both a psychosocial predictor at baseline and physical activity at a later time-point were retained. A final 25 studies ($N = 5,897$) met inclusion criteria and were retained for inclusion. Two researchers independently abstracted data for analyses. Random effects meta-analyses and meta-analytic structural equation modeling were conducted.

Results: Most studies included survivors of breast cancer, who had completed curative treatment or samples including both participants who had completed and were receiving treatment. Eight psychosocial predictors of physical activity were identified including intentions, self-efficacy, attitudes, affective attitudes, instrumental attitudes, injunctive norms, descriptive norms, social support and past behavior. In bivariate analyses, self-efficacy and intentions ($r_+ = 0.26$, $r_+ = 0.33$, respectively) were the strongest predictors of physical activity. Attitudes, injunctive norms, self-efficacy, intentions, and physical activity ($k = 22$, $N = 4,385$) are included in the structural equation models. All specified paths are significant. The self-efficacy-physical association relation was moderated by sample age. The intention-behavior relation was moderated by BMI. No other moderation effects were observed.

Conclusion: These findings can be used to design physical activity interventions for cancer survivors. Results indicate that strengthening intentions and enhancing self-efficacy are likely to be effective. Further, interventions may be strengthened by testing volitional strategies such as self-monitoring and implementation intentions.

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EARLY MULTISPORT PARTICIPATION IN YOUNG ADULTS: A PATH ANALYSIS OF POTENTIAL HEALTH BENEFITS

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Approximately 60 million children play organized sports in the U.S. Evidence is growing that early specialization in sport is associated with injury, burnout, and disengagement from physical activity. These statistics are alarming, as continued patterns of inactivity are associated with poor health in adulthood. However, the benefits of multisport participation are not well established and children who are considered “gifted athletes” could be less susceptible to injury, have higher motivation, or play more sports. The purpose of this cross-sectional study was to test a novel theoretical model that multisport participation contributes to greater rates of physical activity through less physical dysfunction and more use of physical activity regulation strategies. To test this hypothesis, 894 adults ($M_{age} = 21.01 \pm 2.35$; 52% female) completed an online survey assessing demographic information, number of organized sports played between ages 3-18, physical activity (*Godin Leisure-time Exercise Questionnaire* (GLTEQ)), *Physical Activity Self-Regulation Questionnaire* (PASR), *Hospitalized Anxiety and Depression Scale*, *Multifactorial Memory Questionnaire* (memory mistakes subscale), concussion history and functional difficulties in walking and lifting. A path model was tested using Mplus (version 8.1) such that GLTEQ was regressed on demographics, concussion history, perceptions of mental health and memory, physical function, sport achievement, number of sports played and PASR, with all indirect effects specified between outcomes and #sports. The model fit the data ($\chi^2 = 3.566$ ($df=2$) $p > .05$, CFI = 0.993, RMSEA = .030, SRMR = .007) and the pattern of significant pathways supported the hypothesis. The direct effect of #sports on GLTEQ was not significant ($p = .054$), yet significant indirect pathways via physical dysfunction and PASR, and via PASR, were found. Despite #sports showing a low positive association with concussion, #sports was negatively associated with memory mistakes, and not associated with depressive symptoms. The findings suggest that greater number of sports played from ages 3-18, the better one's self-reported physical & cognitive health, and engagement in physical activity and self-regulatory strategies to maintain it (regardless of demographics and “talent” via achievement). The cross-sectional design of this study precludes any causal inferences, but results are promising. Further research on multisport effects is warranted.

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DAILY MINDFULNESS AND ITS RELATIONSHIP TO DAILY PHYSICAL ACTIVITY

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Existing cross-sectional and intervention research has demonstrated a link between trait mindfulness and physical activity between persons, as well as associations between state mindfulness and various affective and self-regulatory mechanisms within persons, but to date, there have been no studies exploring the within-person relationship between mindfulness and health behaviors on a day-to-day basis. This study investigated the relationship between daily mindfulness and daily physical activity, using a novel conceptualization of mindfulness that draws from both trait and state theories. Participants ($n=157$) were undergraduate college students who completed an 11-day daily diary protocol. Results demonstrated day-to-day within-person fluctuations in mindfulness, as well as a moderate correlation between daily mindfulness and trait mindfulness. Individuals exercised more on days in which their daily mindfulness was higher (approximately 12 minutes additional moderate-to-strenuous physical activity for each 1-point increase on a 4-point mindfulness scale), and this association was stronger among individuals who exercise regularly. Potential mechanisms are discussed which draw on extant mindfulness/health behaviors, trait/state, and exercise/attentional strategies research. Future directions for the development of mindfulness measures that can more accurately predict changes in health behaviors are also discussed. Health behaviors require day-to-day maintenance, and therefore gaining an understanding of the relationship between day-to-day fluctuations in health behaviors and mindfulness will help to inform the development of future mindfulness-based health behavior interventions.

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CHANGES IN PHYSICAL ACTIVITY FOLLOWING A SEDENTARY INTERVENTION IN BREAST CANCER SURVIVORS (PLAN TO STAND)

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Background: Strategies for reducing sedentary behavior include breaking up sedentary time and reducing total volume of sedentary activity. Reducing sedentary behavior can lead to compensatory behaviors including standing more, doing more activity or sleeping more. The purpose of this investigation was to analyze the accelerometer-measured physical activity for breast cancer survivors in a trial of reducing sedentary behavior, focusing on light and moderate-vigorous physical activity (MVPA) intensities.

Methods: This randomized controlled trial ($n = 60$) had three groups including a (1) reducing total volume of sedentary time using a standing desk, (2) re-patterning sedentary times by breaking up long periods of sitting, and (3) no-treatment control. Physical activity (PA) was measured via Actigraph wGT3x-BT accelerometer at baseline and after 8 weeks of intervention. PA was analyzed in SAS 9.4 using linear mixed effect modeling to account for repeated measures.

Results: On average, participants were $57.0 (\pm 7.8)$ years of age, with mean BMI of $29.6 (\pm 9.7)$ kg/m² at baseline. Mean time since diagnosis was $4.5 (\pm 3.7)$ years. Participants in the three groups did not differ with respect to key demographic or clinical characteristics. Ninety-five percent of participants completed accelerometer wear. Baseline to 8-week change in weekly minutes of MVPA was -35.6 ± 18.8 in Group 1, 10.6 ± 18.7 in Group 2, and 12.1 ± 24.2 in Group 3. Light-intensity activity changed by -75.8 ± 45.7 , -5.8 ± 33.5 , and -33.3 ± 25.0 , respectively. While the changes were not statistically significant, the effect sizes (compared to the control group) for MVPA in group 1 was 0.23, compared to -0.12 in group 2. The effect size for light PA in group 1 was 0.21, and for light PA in group 2 the effect size was -0.0.

Conclusions: The focus of this intervention was reducing sedentary behavior, and as a manipulation check compensatory light or moderate-vigorous physical activity changes were not observed in these breast cancer survivors. Participants in this study were very active, completing more than the federally recommended levels of physical activity at both measurement points. The intervention did not target physical activity, thus these results are expected. To increase physical activity, the intervention needs to focus on that behavior. Standing time and sleeping time was recorded and additional analyses will include changes in those behaviors as well.

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CHANGES IN SLEEP QUALITY AMONG CANCER SURVIVORS FOLLOWING A CLINICALLY IMPLEMENTED EXERCISE PROGRAM

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Purpose: Many cancer survivors report poor sleep quality during and following treatment(s). Exercise may improve sleep, but changes in sleep quality following a clinically implemented cancer exercise program, or the impact of change in physical fitness on sleep quality is not well understood. This study examined changes in sleep quality among cancer survivors following a 12-week exercise program, and associations of these changes with fitness responses.

Methods: The BfitBwell exercise program consists of supervised combined aerobic and resistance exercise sessions, 2x week for 1-hour, for individuals undergoing or within 6-months of cancer treatment. Sleep quality was self-reported using the following questions: How often do you awaken during the night [1 (never) – 5 (> 2 times/night)]? During the past 4-weeks, how would you rate your sleep quality [1 (very poor) – 5 (very good)]? Fitness was assessed by grip strength and the 6-minute walk test (6MWT). Wilcoxon Signed-Rank tests were conducted separately for each sleep question to examine changes in participants' categorical responses from pre- to post-program. Participants were classified as did or did not achieve clinically meaningful improvements in grip strength (≥ 67.98 kg) or 6MWT (≥ 30.5 m). Changes in sleep responses were compared between these two groups.

Results: N=36 completed pre- and post-program measures of sleep and fitness (MAge = 52.7 ± 13.0 years, MBMI = 25.8 ± 5.2 kg/m², 38.9% breast cancer). At pre-, 47.3% reported awakening at least once per night and 25% rated their sleep as poor or very poor. From pre- to post-, there was no change in the number of participants who reported how often they awoke during the night ($p=.523$), or how they rated their sleep quality ($p=.847$). Among participants who increased grip strength by ≥ 67.98 kg (N=8), 87% rated sleep quality as "good" post-program, compared to 75% at baseline ($p=.059$).

Conclusion: Sleep quality may improve for those who achieve a clinically relevant increase in grip strength following an exercise program. Limitations were a small sample size, self-report measure of sleep, and low prevalence of sleep disturbance at baseline. Future studies should use objective measures of sleep, ensure compliance to exercise programming in order to elicit changes in fitness outcomes, and target cancer survivors who report poor sleep quality at baseline.

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INFLUENCE OF WEEKEND SITTING TIME AND MODERATE-VIGOROUS ACTIVITY IN PREDICTING CARDIOVASCULAR FITNESS AMONG COLLEGE STUDENTS

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Background: Cardiorespiratory fitness (CRF) is an important predictor of morbidity and mortality across the lifespan. Physical activity, especially at moderate-to-vigorous intensities (MVPA), is a key predictor of CRF. However, the role of sedentary time (ST) in influencing CRF as well as overall health and wellbeing, regardless of MVPA is gaining importance in exercise research. College-aged students are particularly vulnerable to ST with the use of internet and technology in their leisure time in addition to spending significant periods of time seated in their classrooms. The purpose of this cross-sectional study was to examine the independent associations of ST and weekly MVPA on CRF among college students.

Methods: Ninety-five university students (Females=47, Mean age = 19.96 ± 0.933) completed an online survey consisting of demographics, CRF questionnaire, Godin-Shephard leisure-time physical activity questionnaire, and a sitting time questionnaire, which assessed estimated CRF (CRFest), physical activity levels, and domain specific weekday and weekend ST, respectively. Pearson correlations and multiple linear regression analyses were used to determine individual associations and contributions of self-report MVPA and weekday and weekend ST on CRFest.

Results: Partial correlations (controlling for sex) were calculated between CRFest, weekly MVPA, and different weekday and weekend sedentary activities. CRFest was significantly correlated with weekend ST ($r = -0.26$, $p < 0.05$) and weekly MVPA ($r = 0.35$, $p < 0.05$) which were included as predictors. The multiple linear regression explained 46.8% of the variance in CRFest ($F(3,91) = 28.55$, $p < 0.001$). Weekend ST was an independent significant predictor of CRFest ($\beta = -0.16$, $p < 0.05$), over and above weekly MVPA ($\beta = 0.25$, $p < 0.05$) and sex ($\beta = 0.64$, $p < 0.0005$). Lower levels of ST, higher levels of MVPA and being a male were associated with higher CRFest levels.

Discussion: Our results highlight the role of ST, specifically weekend leisure sitting time in influencing CRF. Given that weekends are often less structured than weekdays for college students, the leisure-time behaviors they engage in appear to be important contributors to their CRF. Health interventions to improve CRF in college students should not only take an umbrella approach to increase MVPA or overall lifestyle PA but could be more effective by specifically targeting weekend leisure sitting time in this population.

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MEASURING ‘PARTNER INVESTMENT IN PHYSICAL ACTIVITY’ AMONG CANCER SURVIVORS AND THEIR ROMANTIC PARTNERS

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Introduction: The quality of support individuals receive from romantic relationships is one of the strongest predictors of positive illness coping and health behavior change. However, few measures capture how couples view the responsibility of managing their own and their partner's health, which may be crucial to understanding how partners view support behaviors. Because physical activity is recommended for cancer survivors to reduce the side effects of treatment and cancer recurrence, this research explored the reliability and utility of the Partner Investment in Physical Activity scale among couples coping with cancer.

Methods: This research was part of a larger study exploring cancer survivors and their romantic partners' interest in individual and couples-based exercise. Both survivors (n=209) and partners (n=155) individually completed an online survey. On the 18-item Partner Investment in Physical Activity scale, participants indicated whether they are invested in their partner's physical activity (9 items) and whether they perceive their partner to be invested in their own physical activity (9 items) from 1 (strongly disagree) to 6 (strongly agree).

Results: The 18-item Partner Investment in Physical Activity scale demonstrated good reliability in survivors ($\alpha=0.93$) and partners ($\alpha=0.92$), and it was significantly correlated with relationship satisfaction (survivors: $r=0.50$, $p<0.01$, partners: $r=0.48$, $p<0.01$), partner support for exercise (survivors: $r=0.78$, $p<0.01$, partners: $r=0.72$, $p<0.01$), and participants perceived importance of engaging in regular physical activity together (survivors: $r=0.29$, $p<0.01$, partners: $r=0.43$, $p<0.01$). Regarding the two 9-item subscales, participants' investment in their partner (survivors: $M=4.4$, $SD=0.96$; partners: $M=4.5$, $SD=0.93$) was significantly higher than their perceived partners' investment in themselves (survivors: $M=3.9$, $SD=1.18$, partners: $M=4.2$, $SD=1.1$) (survivors: $t(208)=7.2$, $p<.01$, partners: $t(154)=3.7$, $p<0.01$).

Conclusion: The Partner Investment in Physical Activity scale demonstrated good reliability and utility among cancer survivors and their romantic partners. Future research should continue to validate this scale in more specific types of cancer couples (e.g., specific cancer sites, relationship types (married), dual survivor couples) and further elucidate this scale's content validity compared to similar measures (e.g., communal coping).

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PROMOTING STRENGTH TRAINING AMONG BABY BOOMERS: MESSAGE FRAMING EFFECTS ON MOTIVATION AND BEHAVIOR

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When done regularly, strength training can help older adults build muscle mass, preserve bone density, and maintain function and independence as they age. However, only 14% of adults over age 50 report engaging in strength training at least twice per week. Exercise messages about why and how older adults should engage in strength training could influence their perceptions of, and participation in the behavior. Thus, the purpose of this study was to determine whether manipulating message frames accompanying a brief home-based strength training workout would have an effect on Baby Boomers' exercise motivation or behavior. Participants (N=308) were recruited online and randomly assigned to one of four message conditions: Easy Intrinsic, Hard Intrinsic, Easy Extrinsic, or Hard Extrinsic. Immediately after completing baseline measures of motivation (Exercise Self-Regulation Questionnaire) and exercise (IPAQ – short form), participants received the recommended strength training workout and corresponding motivational message (e.g., 8 Quick and Simple Exercises to Feel Refreshed and Energized Today! [Easy Intrinsic Condition]). The strength training exercises were designed to be suitable for adults aged 50-70 of varying activity levels to complete at home. Two weeks later, 213 participants completed follow-up measures of motivation and exercise. Of these, 70% reported that they had completed the recommended workout at least once. An ANCOVA revealed a significant group effect for introjected ($F=2.90$, $p=.04$) and external regulation ($F=4.05$, $p=.008$), which were higher at follow-up among participants exposed to an extrinsic message relative to an intrinsic message. Strength training ($Z=-5.95$, $p<.001$) and moderate activity ($Z=-3.23$, $p=.001$) increased in the full sample, but these changes were comparable across groups. These results suggest message framing may have a short-term impact on Baby Boomers' exercise motivation, such that emphasizing extrinsic goals (i.e., weight loss and appearance) may contribute to controlled motivation. Highlighting intrinsic goals related to feeling good may be a more effective approach, but continued exposure to exercise messages may be needed to have a sustained impact on motivation and behavior. Future studies should explore strategies for refining and delivering effective, evidence-based physical activity messages in contexts such as healthcare, health coaching, and worksite wellness.

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TESTING THE WEISS-HARTER-MODEL: PHYSICAL ACTIVITY, SELF-ESTEEM, ENJOYMENT, AND SOCIAL SUPPORT IN CHILDREN AND ADOLESCENTS

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Background: Several theories have been established to explain physical activity (PA) participation. However, many of these theories might not be applicable to adolescent PA behavior as they require a high level of cognitive reflection. Weiss suggests a model for youth which is based on the theoretical concept of Harter, focusing on self-esteem within social, emotional, and developmental aspects to explain behavior. The aim of this study was to test the original and social support focused alternative version of the Weiss-Harter-model, and to cross-validate the findings in two separate studies.

Methods: Data from two cross-sectional studies was retrieved and the models tested using structural equation modeling. Participants aged 11-17 years were recruited from a school (Study 1: N=182) and from the German MoMo study (Study 2: N=2,274). They filled in questionnaires about perceived competence, social support, self-esteem, PA enjoyment, and minutes of moderate-vigorous PA (MVPA).

Results: None of the studies showed a good model fit for the original model (Study 1: CFI=.870, RMSEA .118 [90% CI .081-.158], $\chi^2 = 38.7$, $p < .01$; Study 2: CFI=.871, RMSEA .148 [90% CI .140-.155], $\chi^2 = 1112.6$, $p < .01$), explaining only 12% and 17% of MVPA variance, respectively. The alternative model which added the direct paths of social support to MVPA and PA enjoyment had a very good model fit for both Study 1 (CFI=1.000, RMSEA .000 [90% CI .000-.031], $\chi^2 = 4.8$, $p > .05$) and Study 2 (CFI=.990, RMSEA .043 [90% CI .035-.051], $\chi^2 = 103.7$, $p < .01$). The addition of these paths led to changes in effect size and directions of other path coefficients, with self-esteem having a small to meaningless impact on MVPA. The revised models accounted for 38% and 42% explained variance in MVPA, respectively.

Discussion: The prominent role of self-esteem in the original model could not be confirmed. Instead, the results emphasize the role of social support for PA and PA enjoyment, which is in line with current research. Interventions to increase adolescent PA levels should thus focus more on components of social support instead of self-esteem. Future studies are needed to examine the interplay between social support, PA enjoyment and perceived competence as PA determinants.

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PHYSICAL ACTIVITY, SEASONALITY, AND WEATHER: A SCOPING REVIEW OF RESEARCH WITH DEVICE-BASED MEASURES OF PHYSICAL ACTIVITY

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Background: Weather is a naturally occurring dynamic construct that has demonstrated both positive and negative associations with physical activity (PA). Weather conditions can facilitate or inhibit physical activity, and thus represent potential tailoring variables for context-sensitive, just-in-time PA interventions. This scoping review examines associations between weather and device-based measures of physical activity since the last review 12 years ago.

Methods: PubMed was searched from January 1, 2006 until December 31, 2019. A total of 558 unique articles were identified. Articles were included if physical activity was measured using a device (e.g., ActiGraph, StepWatch) and the results reported an association between physical activity and either seasonality or specific weather indices (e.g., cloud cover, temperature, precipitation, humidity, photoperiod, wind speed). Following title and abstract review, three coders independently assessed 93 full text articles for eligibility. Data were extracted from 67 articles.

Results: Most articles included an international (versus US-only) sample (80%), studied adults (55%), utilized research-grade accelerometers to measure physical activity (59%), and measured seasonality instead of specific weather indices (51%). A subset of studies (20%) investigated physical activity for individuals with chronic obstructive pulmonary disease, obesity, osteoarthritis, and type 2 diabetes. Physical activity measures focused on volume (daily step count [46%], total activity counts [16%], total energy expenditure [4%]) and intensity-specific duration (36%). Physical activity was consistently lower in winter compared to spring, summer, or autumn. Studies consistently reported that physical activity had (a) positive associations with temperature (with some studies reporting a quadratic association indicating reduced activity during excessive heat) and photoperiod, and (b) negative associations with precipitation, cloud cover, humidity and wind speed.

Conclusions: Some weather conditions were consistently more conducive to physical activity than others, with positive associations between device-based measurements of physical activity, temperature and photoperiod consistently documented in diverse populations around the globe. Other conditions, such as cloud cover, precipitation and wind, may inhibit physical activity. Weather is a potential tailoring variable for context-sensitive, just-in-time physical activity interventions.

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INCREASING PRESCHOOLERS' PHYSICAL ACTIVITY VIA A MOBILE APP GAME

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Background: Children today are being raised in technology-rich environments. Paralleling this is the noted increase in sedentary screen-time and decline in physical activity (PA) levels among young children. Applying emerging technology to promote PA, therefore, has generated substantial public interest. This study aimed to investigate the feasibility of employing a culturally tailored mobile app (Jungle Gym) to encourage PA among preschool children in rural Head Start and preschool centers.

Methods: Preschool children ($N = 11$, girls = 6, $X_{age} = 54.07 \pm 3.15$ months, $X_{BMIz} = 0.54 \pm 1.08$), were recruited from child workshop for Healthy Environments feasibility study (HEROs). Children were instructed to play (1) mobile app (Jungle Gym) (7 minutes), (2) obstacle course (10 minutes), and (3) motor skills (MS) building (10 minutes) activities. PA levels were captured by ActiGraph GT9X accelerometers attached to the right hip. The percentage of time spent in moderate-to-vigorous PA (MVPA%) for each activity was calculated as the dependent variable. Repeated-measures ANOVA was performed to evaluate differences in MVPA% among the three activities.

Results: Descriptive statistics showed that preschool children spent most MVPA% in MS building ($84.15\% \pm 15.82\%$), followed by mobile app ($81.04\% \pm 18.04\%$) and obstacle course ($59.10\% \pm 16.89\%$). Repeated-measures ANOVA indicated a significant difference in MVPA% among three activities, ($F(2,20) = 8.61$, $p = 0.002$). Pairwise comparisons revealed that MVPA% in obstacle course was significantly lower than mobile app (mean difference [MD]: -21.94 , 95% confidence interval [CI]: -35.68 to -8.21 , $p = 0.003$), and MS building (MD: -25.06 , 95% CI: -11.32 to -38.80 , $p = 0.001$). No significant difference was noted between mobile app and MS building (MD: 3.12 , 95% CI: -10.62 to 16.85 , $p = 0.641$), indicating these two activities may trigger equivalent MVPA.

Conclusions: Our findings suggest that a culturally tailored mobile app (Jungle Gym) is able to prompt a considerable proportion of MVPA which is comparable to traditional physical education, supporting the feasibility of increasing preschoolers' PA via mobile apps. Such apps may also be used as an alternative at home to encourage PA and decrease sedentary behaviors when other activity equipment or outdoor opportunities are absent. More research is warranted on the impact of the app over time (i.e. repeated usage) and in different settings (i.e. home and classroom environments).

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SEIZING THE MOMENT: PRELIMINARY RESULTS OF COMPLIANCE TO ECOLOGICAL MOMENTARY ASSESSMENT FROM THE ADAPT STUDY

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Background: The transition from late adolescence to emerging adulthood represents a major life transition, often associated with significant declines in physical activity behaviours (Bray & Born 2004; Kwan et al., 2012). Current knowledge of these behaviours, however, is largely based on cross-sectional or infrequent longitudinal designs, and is limited in its understanding of contextual and intra-individual factors impacting physical activity during this transitional time. Ecological Momentary Assessment (EMA) is an intensive data capture method that can address these limitations (Shiffman et al., 2008), and is made easier through recent advancements in smartphone technology and widespread use. While compliance has been strong among some populations (e.g., Dunton et al., 2011; Maher et al., 2018), compliance among youth is in question (Bedard et al., 2017). The purpose of the current study was to examine the compliance to EMA prompts in high school students.

Methods: The current sample included 166 grade 11 students (Mage=15.76, 57 females) from one large school board in Southern Ontario. Participants were asked to wear accelerometers and complete 6 EMA prompts on their smartphones each day, for a 7-day study period. Each prompt included a very brief questionnaire assessing context, acute feeling states, and motivations to be physically active.

Results: On average, participants responded to 16.98 (SD +/- 7.56) of the prompts, with response to prompts ranging from 1 to 34. When data from 19 non-participants (< 7 prompts/week) was removed, the mean response increased to 18.55 (SD +/- 6.60). It should also be noted that there was variability in compliance based on when the EMA prompts were sent, with the early morning prompts having the lowest compliance (43%) while the afternoon or evening prompts ranged in compliance from 54% - 60%.

Conclusions: Findings suggest that the compliance in this adolescent cohort is lower in comparison to other EMA studies of younger children and older adults. Although it may be that the youth population, in general, may be less motivated to respond to EMA prompts, raising some questions about the validity of the data, these results may be more reflective of EMA research using community-based sampling approaches. More research is required to understand the potential factors related to EMA response patterning among the youth population.

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PATTERNS OF INDIVIDUAL LEVEL IMPLEMENTATION IN A WORK-PLACE HEALTH AND WELL-BEING PROGRAM

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Objectives: Desire2Move (D2M) is an annual peer support health and well-being program that encourages physical activity (PA) participation among university employees. Previous program evaluations of D2M assessed implementation at the organizational level, but not at the individual level. Therefore, the purpose of this study was to examine patterns of individual level implementation (non-compliance) during years 5 and 6 of D2M.

Methods: During the 8-week program, D2M participants recorded minutes of PA using the *MapMyFitness* mobile app or website. Student liaisons tallied individual PA minutes on Monday for PA logged the previous Monday to Sunday. Participants who did not report any minutes of PA during a program week were non-compliant. Frequencies, means, standard deviations, and independent *t*-tests examined patterns of non-compliance.

Results: During year 5, 207 employees participated in D2M, and 118 (57.0%; $M = 7.75$, $SD = 4.67$) were non-compliant at least one time. Of those, 34.0% were non-compliant one week, 20.3% were non-compliant two weeks, and 62.7% were non-compliant three weeks or more. During year six, 286 employees participated in D2M, and 150 (52.5%; $M = 15.00$, $SD = 5.65$), were non-compliant at least one time. Of those, 34.0% were non-compliant one week, 15.3% were non-compliant two weeks, and 50.7% were non-compliant three or more weeks. For both program cycles, the number of non-compliant participants increased from week 1 to week 8 ($\text{Range}_{\text{yearfive}} = 32 - 79$; $\text{Range}_{\text{yearsix}} = 36 - 94$). The number of non-complaint participants between years was not significantly different $t(7) = -0.74$, $p = 0.469$.

Conclusion: Over half of D2M participants were non-compliant at least one time during the 8-week program. To improve program effectiveness, we need to understand implementation at the individual level. Future research should identify techniques, such as targeted and tailored messages to non-compliant participants, to improve program implementation.

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ADVERSE CHILDHOOD EXPERIENCES, COPING AND QUALITY OF LIFE IN MENTAL HEALTH PROVIDERS

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Endorsing a personal history of adverse childhood experiences may increase a provider's risk of developing negative physical and psychological outcomes. Mental health providers are often required to work nights and weekends in order to accommodate the needs of their clients and are at risk of being overextended. Understanding ways in which coping strategies may mitigate these negative experiences may improve health and well-being of providers and improve quality of care for their clients. The purpose of this study was to examine adverse childhood experiences and the moderating role of coping on quality of life among mental health providers. Mental health providers ($N = 371$; 94.1% female; Mean age = 47.12) were surveyed regarding their coping strategies, history of adverse childhood experiences, and quality of life experienced. The ethnic diversity of the sample was as follows: 88.4% White/European American/Not Hispanic, 4.6% Hispanic/Latino, 2.4% Black/African American, 2.2% Bi-Racial/Mixed, 1.4% Asian/Asian American, and 1.1% "Other". Approximately 32% of the sample reported working more than 40 hours per week. Results indicated that providers who endorsed a history of adverse childhood experiences (82.5% of the sample) endorsed a poorer quality of life than those who did not have a history ($t = -3.00$, $p = .003$). Hierarchical multiple regression analysis revealed that adverse childhood experiences, coping and interactions among adverse childhood experiences and coping significantly predicted quality of life (Adj. $R^2 = .46$, $F(29, 339) = 11.64$, $p < .001$). Adverse childhood experiences were no longer a significant predictor of quality of life when coping strategies were added to the model (Adj. $R^2 = .43$, $F(15, 353) = 19.84$, $p < .001$). Substance use ($t = -2.00$, $p = .046$), behavioral disengagement ($t = -5.83$, $p < .001$), planning ($t = -2.38$, $p = .018$), self-blame ($t = -5.90$, $p < .001$) and self-distraction ($t = -3.09$, $p = .002$) were negatively associated with quality of life, while emotional support ($t = 3.98$, $p < .001$) was positively associated with quality of life. Both substance use and denial moderated the relationship between adverse childhood experiences and quality of life. The findings of this study highlight the prevalence of adverse childhood experiences in mental health providers, the impact these experiences likely have on quality of life and the importance of coping strategies that may assist in managing psychological and physical health outcomes. Regardless of the mental health provider's background, it is imperative that all mental health providers begin establishing self-care routines early on in their careers. Though coping and self-care are discussed conceptually, there are limited resources for mental health providers that ensure that they are taking the time to care for themselves throughout both graduate school and their professional careers.

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MINDFULNESS FACETS PREDICT QUALITY OF LIFE AND SLEEP QUALITY VIA DISTRESSES IN CANCER PATIENTS: MODERATED MEDIATION ANALYSIS

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Introduction: Patients with colorectal cancer are at elevated risks of physical and emotional distresses which could lead to sleep disturbance and impaired functioning. Identifying mindfulness facets that can predict distresses and functional outcomes is of clinical relevance. The objective of this study was to examine the temporal associations among mindfulness facets, physical and emotional distresses, and functional outcomes.

Research Design: A total of 127 Chinese patients with colorectal cancer participated in this longitudinal survey. The participants completed the Five Facet Mindfulness Questionnaire, Memorial Symptom Assessment Scale, Perceived Stress Scale, Hospital Anxiety and Depression Scale, Pittsburgh Sleep Quality Index, and SF-12 Health Survey. Moderated mediation analyses were performed under Bayesian estimation on the direct and indirect effects of mindfulness facets on quality of life and sleep disturbance via physical and emotional distresses, using acting with awareness as a moderator.

Results: There were no significant direct effects from the mindfulness facets to functional outcomes. Awareness and nonreacting showed significant and positive indirect effects on physical and mental SF-12 via physical and emotional distresses, respectively. Awareness, nonjudging, and nonreacting showed significant and negative indirect effects on sleep disturbance via emotional distress. The indirect effects of nonreacting on the functional outcomes increased as a function of awareness.

Conclusions: This longitudinal study demonstrates significant indirect effects from mindfulness facets to functional outcomes via physical and emotional distresses. Nonreacting could play a stronger protective role in improving sleep disturbance and functioning among patients with greater awareness.

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NON-MONOSEXUALITY AS A FACTOR IN INCREASED PREVALENCE OF SEXUAL RISK BEHAVIOR

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Background: As researchers explore the complexities of human sexuality, a lack of behavioral sexual health research persists concerning differences between monosexual and non-monosexual men and the conflation of these groups as “men who have sex with men” (MSM). Researchers have begun investigating these differences, finding that men who have sex with men and women (MSMW) report higher rates of sex work, more sex with partners of different or unknown HIV status, and more male sexual partners. We sought to determine whether non-monosexuality influenced engagement in greater sexual risk among a national cohort of sexual and gender minority (SGM) men.

Methods: Cross-sectional data were collected from a national sample of 10,663 SGM men in the United States. Participants estimated not only numbers of male and female casual sex partners, but also the kinds of sexual behavior including insertive and/or receptive sex, anal and/or vaginal sex, and the HIV statuses of both male and female casual sex partners. Data were analyzed using Pearson Chi-Square and independent-samples t-tests.

Results: The average ages for MSM ($M = 32.48$) and MSMW ($M = 34.83$) were significantly different ($t = -5.12, p = 0.000$). Among MSM, 24.3% identified as Hispanic/Latino, 10.7% as Black/African American, and 51.5% as White. Among MSMW, 23.2% identified as Hispanic/Latino, 14.0% as Black/African American, and 51.2% as White. MSMW reported significantly more male casual partners compared to MSM ($M_{MSMW} = 10.16, M_{MSM} = 6.89, t = -8.34, p = 0.000$). MSMW also reported significantly more condomless anal sex with male partners of different/unknown HIV status compared to MSM ($M_{MSMW} = 3.32, M_{MSM} = 2.20, t = -2.84, p = 0.000$). Finally, MSMW were significantly more likely to engage in sex work, with 27.7% of MSMW exchanging sex for goods compared to 19.4% MSM ($X^2 = 13.44, p = 0.000$).

Conclusions: While much research conflates MSM and MSMW under monikers like “MSM” and “LGBT samples,” data suggest this overlooks key differences between groups based on one’s monosexuality. Analysis of these data support the hypothesis that people who engage in non-monosexual sex are more likely to engage in riskier health behaviors. These groups would benefit from research informed by a more nuanced understanding of sexuality not defined by the presence of male sex partners. Non-monosexual people engage with health behaviors in different ways, and therefore deserve research that acknowledges these differences.

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THE MODERATING ROLE OF SEXUAL ORIENTATION IN THE ASSOCIATION BETWEEN RELIGIOSITY AND SEXUAL HEALTH AMONG COLLEGE STUDENTS

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Objective: Past research has shown that religiosity can impact sexual behaviors of youth. No known studies have examined the relationship between religiosity and sexual behavior in sexual minority (e.g., gay, lesbian, bisexual) youth. As many world religions promote doctrines that include negative views toward sexual minorities, it is unclear if religiosity would impact sexual minority sexual behaviors in the same way as heterosexual individuals.

Methods: College/university students across Oregon (N = 1213) completed an online cross-sectional survey. The sample included four sexual orientation subgroups: straight (reference group; N = 992); gay/lesbian (N = 29); bi/pansexual (N = 153); and unsure (N = 39). Religiosity was assessed using the 15-item Centrality of Religiosity Scale (M = 2.44, range 1-5). Using logistic models in PROCESS, sexual orientation was examined as a moderator of the relations between religiosity and the occurrence (yes vs no) of four sexual behaviors in the past 6 months: sexual activity, birth control use during sex, sexual activity under the influence, and testing positive for an STI. Covariates were age and natal sex.

Results: There was a significant association of religiosity with all outcomes for the straight subgroup: greater religiosity scores were associated with reduced odds of sexual activity (OR = .68, $p < .001$), birth control use (OR = .65, $p < .001$), sex under the influence (OR = .76, $p < .001$), and testing positive for an STI (OR = .63, $p = .02$). Gay/lesbian identity moderated the religiosity association ($p < .05$) such that religiosity was even more protective for gay/lesbian identity for sex under the influence (OR = .68). Bi/pansexual identity was also a moderator ($p < .05$), such that religiosity was relatively less protective for sexual activity (OR = 1.38) and sex under the influence (OR = 1.29), but more protective for birth control use (OR = 1.13).

Conclusions: Sexual orientation moderated the association between religiosity and sexual activity, birth control use, and sex under the influence, but not STI risk. Differences were found when comparing straight individuals to gay/lesbian and bi/pansexual individuals, but not unsure individuals. Also, the current study confirms past research that identifies religiosity as a protective factor for a number of sexual health outcomes excluding birth control use, but suggests that this may be primarily among straight individuals.

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UTILIZING A FACTORIAL EXPERIMENTAL DESIGN IN A RANDOMIZED CONTROLLED TRIAL TO EVALUATE AN ONLINE SEXUAL HEALTH INTERVENTION

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Alcohol use is often implicated in the sexual behaviors that increase college students' sexually transmitted infection (STI) risk. Accordingly, we developed and are currently evaluating a highly efficient online intervention, *itMatters*, to address the intersection of alcohol and sexual behaviors. *itMatters* was designed using the Multiphase Optimization Strategy (MOST), an engineering-inspired framework for creating optimized interventions in three phases: Preparation, Optimization, and Evaluation. Based on our conceptual model, we developed a 5-component intervention that was piloted and revised during two optimization trials. Based on these results, we moved forward with evaluating our optimized treatment package. A 2-arm randomized controlled trial (RCT) for intervention evaluation was originally proposed, however, one of the four participating institutions required students to complete sexual violence prevention education. Therefore, we adapted an existing sexual violence prevention module for inclusion in the RCT. This presented three challenges for RCT implementation: (1) evaluation of *itMatters* required a no-treatment control; (2) randomization at the individual (student) level with a no-treatment control arm posed contamination issues; and (3) potential interaction of sexual violence programming with *itMatters* sexual health. To address some of these issues, our approach includes a two-by-two factorial RCT design with placebos (e.g., sleep and mental health) for control students. Other challenges will be addressed analytically at the conclusion of the RCT. The factorial design enables us to speak to the effectiveness of *itMatters*, effectiveness of the not-previously-evaluated sexual violence prevention module on its own, and the effectiveness of sexual violence prevention and *itMatters* together. Because *itMatters* takes a sex-positive approach, simply adding the sexual violence prevention module to the intervention introduced a concern that its inclusion could dilute sex-positive messaging. This process highlights the flexibility needed to implement online health promotion interventions that meet students' needs, acknowledge institutional requirements, and are scientifically rigorous. This also highlights the benefits of utilizing a factorial design in an RCT for intervention development and evaluation.

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THE MEDIATING EFFECT OF SUBSTANCE USE ON THE RELATIONSHIP BETWEEN DEPRESSION AND HOURS OF SLEEP

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Background: Depression, substance use, and insufficient sleep are prevalent health issues among U.S. high school students, in part due to academic related stress and their use of technology. There is a known link between depression and insufficient sleep, yet, little evidence is currently available regarding how substance use may play a role in the relationship. This study aimed to examine the mediating effect of substance use on the association between depression and insufficient sleep among high school students.

Methods: This study used the 2017 Youth Risk Behavior Surveillance System data collected by the Center for Disease Control and Prevention with the intent to assess the conditions, changes, and co-occurrence of health behaviors among U.S. high school students. Student race, sex, age, and hours of watching TV/playing video games per day were used as covariates. Descriptive statistics and correlations were examined in relation to the distributions, multi-collinearity, and associations of the variables used in this study. Then, mediation analysis using Hayes Process macro v.3.1 was run to investigate whether the relationship between student depression (feeling sad or hopeless) and hours of sleep on school nights would be mediated through student substance use (current uses of cigarette, electronic cigarette, cigar, alcohol, and marijuana).

Results: A total of 10,970 high school students with complete data were included in the study. Depression was negatively associated with hours of sleep, but was positively related to substance use after controlling for race/ethnicity, sex, age, and hours of watching TV/playing video games per day. Likewise, substance use was negatively associated with hours of sleep on school nights ($r = -.12, p < .01$). There was no multi-collinearity issue identified. Mediation analysis indicated that substance use served as a significant mediator in the relationship between depression and hours of sleep ($ab = -.03$, Bootstrapped SE = .01, Bias-corrected Bootstrap Confidence Interval [CI] [-.05, -.02]). Specifically, being depressed was associated with increased substance use ($a = .27, SE = .02, CI [.24, .31]$), which in turn led to decreased hours of sleep ($b = -.13, SE = .02, CI [-.17, -.09]$).

Conclusions and Implications: In summary, the U.S. high school students who were depressed had fewer hours of sleep on school nights than those who were not depressed. More importantly, being depressed increased the students' likelihood of using various types of substances, which in turn led them to sleep fewer hours on school nights. Our findings provide insight regarding the association between depression, sleep, and substance use. These findings indicate a need to develop interventions aimed at addressing multiple co-existing behaviors within this population. Finally, integration of a behavioral health component into school-based health education programs is needed.

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ROLE OF ADULT ATTACHMENT AND INTIMACY IN SLEEP IN COLORECTAL CANCER PATIENTS AND SPOUSAL CAREGIVERS

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Close relationships and intimacy foster emotional comfort and feelings of safety, which are optimal for sleep. Sleep disturbance is a prominent concern among adult cancer patients and their spousal caregivers. Less known is the extent to which general attachment orientation and daily variation of intimacy are associated with patients and caregivers' own daily sleep efficiency and sleep quality, which this study investigated.

Newly and recently diagnosed colorectal cancer patients ($n = 48$, $M = 55.5$ years old, 40% female) and their heterosexual spouses ($M = 55.1$ years old) individually completed the Consensus Sleep Diary and three intimacy items regarding feeling cared for, validated, and understood by one's partner, daily across 14 consecutive days, from which sleep efficiency (SE: 0 – 100%) and sleep quality (SQ: 1 – 5) were derived. Attachment orientations (MAQ: security, avoidance, and anxiety) with the partner was self-reported once.

Good SE and fair SQ were reported by patients (SE = 89% and SQ = 3.61) and caregivers (SE = 89% and SQ = 3.51). Multilevel modeling separately predicting SE and SQ revealed that among patients, SE was not associated with general attachment orientations or daily intimacy; and better SQ was associated with greater intimacy on the same day ($B = 1.31, p < .048$). Among caregivers, worse SE was associated with greater general attachment security ($B = -.17, p < .014$), greater general attachment avoidance ($B = -.30, p < .001$), and greater daily intimacy ($B = -.23, p < .001$), although the impact of daily intimacy augmented by general attachment security ($B = 0.04, p < .010$) and general attachment avoidance ($B = 0.07, p < .001$). Better overall SQ in caregivers was associated with general attachment avoidance ($B = 1.22, p < .028$). Caregivers' better SQ related to greater intimacy on the same day ($B = 1.38, p < .018$), though the impact of daily intimacy attenuated by general attachment avoidance ($B = -.046, p < .001$) but intensified by general attachment anxiety ($B = 0.24, p < .011$).

Findings provide preliminary evidence highlighting that both stable relational characteristics and daily interpersonal factors play substantial roles in distinct aspects of sleep for cancer caregivers but not for patients around the time of diagnosis. Further investigation of daily psychosocial and medical characteristics attributable to sleep disturbance is crucial for understanding discrete contributors to sleep in cancer patients and their caregivers.

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SCREEN TIME, SLEEP, AND ACTIVITY LEVEL FOR COLLEGE STUDENTS IN HAWAII

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Screen time has been associated with poor sleep and inactivity, obesity, anxiety and depression. Most studies focus on the effect of screen time on children and adolescence. This study hypothesized that screen time would correlate with reduced total sleep time (TST), delayed sleep onset, reduced physical activity and greater BMI in college students. Participants included 191 undergraduate students (8.5% of the student body) of a small Honolulu university. The faculty were solicited to allow the survey to be administered in their classrooms. The Report of Undergraduate Screen Time (RUST) was developed by the senior author and consisted of items regarding demographics, BMI, type of screen use, anxiety regarding screen availability and dependency on screen use. The Godin-Shephard Physical Activity Questionnaire and questions from the Pittsburgh Sleep Quality Index (PSQI) were also administered. Pearson correlations and student t-tests examined the association of screen use by demographics, type of screen use, anxiety and dependency on screen devices and measures of sleep and activity. Participants reported being engaged in screen time for most of their waking day and significantly more than their time asleep. Weekend use ($M = 13.15$ hours/day) was greater than weekdays ($M = 11.64$ hours/day) ($t(127) = 25.71, p < .01$). Male students reported greater use of screen time for gaming ($t(30) = 4.6, p < .01$), while female students reported more social media use ($t(130) = 2.60, p < .01$). Anxiety levels regarding screen availability and dependency on screen devices were high and significantly correlated ($r(185) = .464, p < .01$). No significant associations were found between screen time and TST, sleep onset time, BMI, activity level, anxiety or dependency regarding screen use. Gender differences in gaming and use of social media are consistent with psycho-evolutionary theory regarding gender roles. The lack of association between screen time and measures of sleep, physical activity, and BMI was surprising and may reflect the ubiquitous use of screen time across all groups. Our study was limited in its reliance on self-report and that the psychometric properties of the RUST have yet to be established.

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IMPLICATIONS OF CHRONODISRUPTION ON PHYSICAL AND MENTAL HEALTH IN COLLEGE STUDENTS

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Chronodisruption (CD) is characterized by discrepancies between biologically preferred sleep-wake schedules and socially enforced schedules (Erren et al., 2009). CD has been linked to depression (Keller et al., 2016) and health risks (Erren et al., 2009). College students may be prone to CD, as they transition to a less structured setting and alternating class start times (Dills & Hernandez-Julian, 2008). The current study will measure CD by analyzing discrepancies between preferred and actual waketimes and consider links between developmental and environmental factors (e.g., year in school and residential status) and CD, as well as how CD relates to mental and physical health among a sample of college students.

Participants were recruited from a mid-sized urban university ($n = 402$, 80.5% female), and reported on age, gender, residential status, year in school, BMI, and symptoms of anxiety and depression. Actual waketimes were reported using a daily diary and preferred waketimes were reported using an item from the Morningness-Eveningness Questionnaire (MEQ). A novel index of waketime discrepancy was calculated by categorizing actual and preferred waketimes based on six MEQ classifications (e.g., 5:00-6:29 A.M.) and taking the difference between categories. Scores ranged from 0-4, and higher scores indicate a greater degree of CD.

More than half (64%) of participants reported a discrepancy between actual and preferred waketimes. Linear regressions demonstrated nonsignificant relations between degree of CD and year in school, anxiety, and BMI. Linear regressions revealed a significant positive relation between degree of CD and depression ($p < .01$). ANOVAs indicated greater degrees of CD among students living with a parent or guardian ($M = 1.04$) compared to those living in residential halls ($M = .78$; $F(3,391) = 3.57, p < .05$). The average weekday waketime of students living with a parent was significantly earlier ($M = 7.81$) than that of students living in residential halls ($M = 8.55$) or off-campus apartments ($M = 8.27$) ($F(2,395) = 22.4, p < .01$). Additional analyses will be conducted to see if CD is more prevalent among those with an evening versus morning preference as assessed by the MEQ.

Results suggest that college students living at home may experience higher levels of CD, influenced by earlier weekday waketimes. While these results are cross-sectional, they suggest that encouraging students to adhere to consistent waketimes may be associated with better mental health.

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PILOT STUDY OF A NOVEL APPROACH MANAGEMENT OF SLEEP ASSOCIATED PROBLEMS IN BREAST CANCER PATIENTS (MOSAIC) DURING CHEMOTHERAPY

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Objectives: This pilot RCT was conducted to assess the preliminary effects of Brief Behavioral Therapy for Cancer-Related Insomnia (BBT-CI) in comparison to a sleep hygiene pamphlet control, and to assess moderators of treatment effect in breast cancer patients undergoing chemotherapy.

Methods: Of 74 participants recruited, 37 were randomized to BBT-CI and 37 were randomized to the control condition. Trained staff members delivered the intervention during chemotherapy treatments to reduce burden on the patients. Insomnia was assessed with the Insomnia Severity Index (ISI), anxiety was assessed with the Spielberger State-Trait Anxiety Inventory (STAI), symptom burden was assessed with the Symptom Inventory (SI), and study staff recorded previous treatments and surgeries received by patients.

Results: Patients randomized to BBT-CI showed significantly greater improvements in their ISI scores than the sleep hygiene group. Additionally, several treatment moderators were identified. The effect of BBT-CI was greater among individuals with lower baseline state-trait anxiety, with previous surgery for cancer, and with higher baseline somatic symptom severity.

Conclusions: BBT-CI shows preliminary efficacy compared to the sleep hygiene handout on insomnia in cancer patients undergoing chemotherapy. A large phase III RCT needs to be conducted to replicate the preliminary findings.

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SELF-REPORTED SYMPTOMS IN SUPPORT OF A NEWLY PROPOSED SLEEP DISORDER: TRAUMA-ASSOCIATED SLEEP DISORDER

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Introduction: Disruptive nocturnal behaviors such as dream reenactment have been observed following exposure to trauma. This has resulted in the proposal of a new parasomnia diagnosis, Trauma-Associated Sleep Disorder (TASD), in order to describe the clinical features of these cases and differentiate them from other parasomnias like REM Sleep Behavior Disorder (RBD). The purpose of the current project was to establish the relationship between self-reported symptoms consistent with TASD and combat exposure, trauma exposure, and PTSD.

Methods: Data was collected as part of the Veterans Affairs VISN-6 MIRECC Post-Deployment Mental Health (PDMH) Registry. The PDMH is a multisite study of military personnel who have served since September 11, 2001. A sample of 3876 active duty military and veterans completed a battery of measures, including the Pittsburgh Sleep Quality Index-Addendum (PSQI-A), Structured Clinical Interview for DSM-IV TR Axis I Disorders (SCID), Combat Exposure Scale (CES), and Traumatic Life Events Questionnaire (TLEQ). Key TASD criteria (e.g. trouble sleeping because of episodes of “acting out” dreams, and trouble sleeping because of memories or nightmares of a trauma) were examined using PSQI-A items to assess the association between PTSD and TASD.

Results: Among individuals with a current PTSD diagnosis, 30.9% endorsed symptoms consistent with TASD, compared to only 3.1% of those without PTSD (χ^2 (2, N = 3661) = 556.4, $p < .001$). TASD symptoms were significantly associated with serving in a warzone (χ^2 (1, N = 3858) = 49.4, $p < .001$), firing a weapon (χ^2 (1, N = 3858) = 140.2, $p < .001$), and being fired upon (χ^2 (1, N=3858) = 61.2, $p < .001$). TASD self-report was also significantly associated with depression, suicidality, combat exposure, and trauma exposure (all p 's < .001). Individuals who endorsed symptoms consistent with TASD were significantly younger ($M = 36.85 \pm 9.79$ years old) than those who did not ($M = 38.14 \pm 10.48$ years old) ($F = 6.017$, $p = .014$).

Discussion: In contrast to RBD, which occurs primarily in older males, the symptoms reported in our cohort of younger veterans and active duty military are more consistent with TASD and lend additional support to this newly proposed sleep disorder. Symptoms which may be frequently characterized as RBD, such as dream reenactment, are consistently more common among individuals with trauma diagnosis and history relative to those without. More research is needed to better understand TASD and whether behavioral sleep interventions may be beneficial in reducing their adverse impact on sleep quality.

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MERITORIOUS AWARD WINNER

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BITTEN BY THE SYSTEM THAT CARED FOR THEM: THE IMPACT OF HEALTHCARE INSTITUTIONAL BETRAYAL ON PATIENTS' HEALTH BEHAVIOR

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Institutional betrayal, a type of betrayal trauma that occurs when an individual's existing trust in and/or dependency on an institution is broken, has been linked to numerous negative health outcomes (Smith & Freyd, 2014). A healthcare organization may engage in behavior consistent with institutional betrayal by failing to respond supportively to patients' traumatic experiences, creating an environment in which reporting concerns is difficult, or minimizing a traumatic experience. Institutional betrayal in healthcare organizations may further traumatize patients and/or reduce trust in the healthcare system and individual providers. BITTEN (Lewis, Langhinrichsen-Rohling, Selwyn, & Lathan, 2019), a newly proposed applied theoretical model of trauma-informed healthcare, emphasizes the importance of considering the impact of institutional betrayal and trauma history on patients' trust of healthcare providers and subsequent health-related expectations and needs. The purpose of the present study was to test the BITTEN model of trauma-informed healthcare by examining the degree to which institutional betrayal and trust in provider predicted patient health behaviors in a sample of undergraduate students (N= 100; 63% White, 25% Black/African American; 81% female; mean age = 19.7 years). Regression analyses revealed main effects of institutional betrayal ($B = -.71$, $p < .05$) and trust in provider ($B = -.31$, $p < .05$) on patient health behaviors as well as an interaction effect between institutional betrayal and trust in provider on health behaviors ($B = .02$, $p < .05$); the overall model accounted for 16% of the variance in health behaviors, $F(3, 82) = 5.27$, $p < .01$. Specifically, participants who endorsed institutional betrayal and low provider trust engaged in more potentially detrimental health behaviors (i.e., withholding relevant medical information from providers and delaying seeking needed medical treatment). Importantly, those with high levels of resilience were more likely to trust their providers, $r = .32$, $p < .01$. Taken together, these results suggest that for patients who have a history of institutional betrayal, mistrust in their healthcare providers may play a large role in their subsequent health behaviors, potentially impacting adherence to medication and recommended behavioral interventions. Thus, facilitating the development of patients' resiliency may buffer against the negative effects of institutional betrayal on provider trust and subsequent health behaviors. Ultimately, this study demonstrates that the behaviors of the healthcare system as a whole, in addition to those of individual providers, may serve to facilitate or disrupt patient trust and subsequent health behaviors.

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THE MEDIATING ROLE OF ANXIETY AND DEPRESSION IN THE RELATION BETWEEN NEIGHBORHOOD INCIVILITIES AND HEALTH OUTCOMES IN LATINOS

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Hispanic adults on the Texas-Mexico border have very high rates of metabolic conditions. Though neighborhoods may exert an influence on health, there is limited evidence that neighborhood environment is directly associated with metabolic conditions. However, neighborhood incivilities, such as crime, traffic or stray dogs, may be experienced as stress and manifested as depression or anxiety. The purpose of this study is to assess the relation of neighborhood incivilities with type 2 diabetes, metabolic syndrome, and a marker of chronic inflammation (c-reactive protein; CRP) and determine if depression and/or anxiety mediate the association. Participants were part of a randomized control trial. Adults were randomly-selected from a Hispanic cohort on the Texas-Mexico border. Through questionnaires, we assessed various neighborhood incivilities (Physical Activity Neighborhood Environment Survey), anxiety (Zung Self-Rating Anxiety Scale), and depression (CES-D). We use lab values to determine Type 2 diabetes, metabolic syndrome, and CRP. We evaluated associations between neighborhood environment and various health outcomes using univariable and multivariable mixed-effect model that accounts for within-subjects correlations. We also conducted a series of path analyses via structural equation models to determine the direct and indirect effects of neighborhood incivilities on mental and physical health outcomes. Participants (n=495) were mostly females (69.4%), without insurance (66.4%) and completed 8th grade (69%). After controlling for covariates, traffic (AOR=1.7, 95%CI 1.2-2.4, $p < 0.001$), crime (AOR=1.7, 95%CI 1.2-2.3, $p < 0.01$), and stray dogs (AOR=1.8, 95%CI 1.3-2.5, $p < 0.01$) were all significantly positively associated with anxiety, while only traffic was associated with depression (AOR=1.7, 95%CI 1.2-2.3, $p < 0.001$). Depression was associated with both type 2 diabetes (AOR=1.75, 95%CI 1.08-2.83, $p=.02$) and metabolic syndrome (AOR=1.72, 95%CI 1.21-2.43, $p < 0.05$). Anxiety was similarly associated with type 2 diabetes (AOR=2.01, 95%CI 1.24-3.25, $p < .001$) and metabolic syndrome (AOR=1.87, 95%CI 1.33-2.63, $p < .001$). We found that both stray dogs and traffic were associated with CRP via the indirect path of both depression and anxiety, while crime was associated with CRP via the indirect path of anxiety only. Our results indicate that while there is not a statistically significant direct effect of various neighborhood incivilities on metabolic conditions and inflammation, certain neighborhood incivilities may impact these health outcomes through depression and anxiety.

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6:15 PM-7:30 PM

RELATIONSHIP BETWEEN ECONOMIC INSTABILITY AND READINESS FOR BEHAVIOR CHANGE AMONG LATINX HYPERTENSIVE PATIENTS

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Behavior change is pivotal in the management of hypertension. Despite efforts to develop behavioral interventions for blood pressure (BP) control, patients—especially in low-income communities—face difficulty successfully implementing behavior change strategies. This study examines how acute economic stressors (food insecurity and financial distress) may impede low-income hypertensive patients from adopting lifestyle changes to control their BP.

In preparation for a clinical trial examining a health education intervention to increase adoption of BP lowering strategies in Latinx adults with uncontrolled hypertension, we administered a baseline questionnaire to patients at a federally qualified health center in southern California. Previously validated instruments like the USDA two-item food insecurity screening measure, the InCharge Financial Distress/Financial Well-Being Scale, and an adapted version of the Leonard Stages of Change questionnaire were used to assess food insecurity, financial distress, and the willingness for behavior change, respectively. Proportion of individuals contemplating or planning behavior change in the domains of diet, physical activity and medication adherence were compared between food secure vs. insecure, and low vs. high financial distress groups using Fisher's exact test.

Mean (\pm SD) age of the participants was 61.1 \pm 10.5. Of the participants (n=101), 72 (71%) were female, 81 (80%) were Latinx, and 79 (78%) reported household income < \$20,000 per year. Roughly 31% reported food insecurity and 71% reported high financial distress. Overall, 53 (52.5%) of the participants were contemplating and 25 (24.8%) were planning to initiate a new strategy to improve their diet. Likewise, 57 (57.6%) were contemplating and 17 (17.2%) planning to increase physical activity while 39 (39.0%) were contemplating and 21 (21.0%) planning to work to improve medication adherence. Food insecurity was associated with higher rates of contemplation (74.2% vs. 42.9%) but lower rates of planning (12.9% vs. 30.0%; $p = 0.016$) for dietary changes, but was not associated with readiness to make other changes. Similar patterns were observed for financial distress.

Among low-income, Latinx adults with uncontrolled hypertension, contemplation was more common than planning for several behavior changes for BP control. Readiness to adopt changes in diet was significantly lower in those facing acute economic stressors compared to other low-income adults.

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6:15 PM-7:30 PM

COMMUNICATION AND PERCEPTIONS OF ENVIRONMENTAL INFLUENCES ON RESPIRATORY SYMPTOMS IN PATIENTS WITH ASTHMA AND COPD

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Introduction: Environmental exposures like air pollution may play an important role in asthma and chronic obstructive pulmonary disease (COPD) morbidity. Despite public health efforts to educate at-risk communities, knowledge gaps still remain. Thus, we sought to understand: 1) perceived impact of environmental exposures on symptoms, 2) preferred information resources for environmental exposures like air pollution and pollen, and 3) whether responses varied by education or income among patients with asthma or COPD.

Methods: Users of a smartphone app (Propeller Health, WI) were invited to complete a brief electronic survey. Eligible patients had a self-reported history of asthma or COPD, were ≥ 18 years, and had been active on the app in the previous 60 days. Electronic consent was obtained from all enrolled patients. The survey consisted of 21 and 17 closed-ended questions for asthma and COPD, respectively. We conducted descriptive analyses, as well as chi-square tests to evaluate outcomes by education (\leq vs. $>$ some college) and annual household income ($<$ vs. \geq \$50,000).

Results: We analyzed data from 698 respondents (500 patients with asthma (mean age (SD) 37.8 (12.3)), 82% female, 59% some college or less, 47% income $<$ \$50k) and 198 patients with COPD (mean age (SD) 60.3 (9.1)), 62% female, 83% some college or less, 68% income $<$ \$50k). Patients perceived that pollen (93% for asthma vs. 86% for COPD), mold (89% vs. 85%), second-hand smoke (89% vs. 83%), and air pollution (84% for both) made their symptoms worse. Up to 47% of patients did not know that NO₂, O₃, SO₂ and PM were pollutants. Patients sought information about changes in air pollution through smartphone apps (66% for asthma vs. 63% for COPD) and televised programs (42% vs. 57%). Similarly, patients used apps (66% for asthma vs. 55% for COPD) and television (37% vs. 57%) to learn about daily pollen status. Few significant differences were identified by education or income.

Discussion: Patients with asthma and COPD perceived that environmental factors were related to their symptoms and sought out information about daily changes in air pollution and pollen via apps and televised programs. Further research is needed to understand perceptions of pollen influence among COPD patients, given that there is no known allergic phenotype in COPD. Largely, communication preferences did not differ by education level or income, suggesting that these information sources are accessible to a broad audience.

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MERITORIOUS AWARD WINNER

C345

6:15 PM-7:30 PM

DISTRIBUTOR AGREEMENTS AND THE LOCATION AND
BRANDING OF UNHEALTHY PRODUCTS WITHIN FOOD STORES

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The food store environment refers to the availability, cost, placement and promotion of foods and beverages within a store. Marketing research has found that more energy dense, nutrient poor (i.e., unhealthy) products are placed at the point-of-sale to influence people's purchasing. Brand familiarity and availability also impact purchase decisions; thus, it is important to examine presence, placement, and branding of unhealthy products in food stores and how these relate to distributor agreements of unhealthy foods and beverages. This study examined the presence and branding of five product categories (e.g., sweet snacks, savory snacks, confectionary, frozen treats, and sugary beverages) in five in-store locations (e.g., front and back endcaps (of store aisles), cash registers, and other displays) as a function of distributor agreement type: formal (i.e., written contract) versus informal (i.e., verbal agreement or handshake). This cross-sectional study involved a single semi-structured interview with owners/managers and collection of store audit data in 72 small stores located in 4 major metropolitan US cities: Baltimore, MD; Durham, NC; Minneapolis/St. Paul, MN; and San Diego, CA. The audit protocol we used assessed the (a) presence (1) or absence (0), and (b) branding (yes=1, no=0) of five product categories by location: front and back endcaps, at the cash register(s), and other displays (e.g. coolers). Distributor agreement type was assessed through owner/manager report. Independent samples t-tests were conducted on SPSS to compare the mean percent of presence/branding of each product category by distributor agreement type. A higher percent of stores had savory snacks available at front endcaps when the stores had formal ($M = 66.9\%$, $SD = 32.8\%$) versus informal agreements ($M = 48.2\%$, $SD = 30.9\%$, $p < .04$). Moreover, a higher percent of stores had sugary beverages available at cash registers when the stores had informal ($M = 42.4\%$, $SD = 45.9\%$) versus formal agreements ($M = 18.2\%$, $SD = 39.2\%$, $p = .049$). Also, there was a higher percent of stores had sugary beverages available at other displays when the stores had informal ($M = 65.4\%$, $SD = 20.6\%$) versus formal ($M = 52.8\%$, $SD = 23.1\%$) agreements ($p < .04$). No other relationships were statistically significant by distributor agreement type ($p > .05$). Distributor agreements exist in small food stores and these agreements appear to play a role in the presence, placement and the branding of some but not all unhealthy foods and beverages. Understanding how agreements influence presence, placement and branding throughout the store is important due to the ubiquity of small food stores in low income communities, and their importance as a source of food and beverages.

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6:15 PM-7:30 PM

THE ASSOCIATIONS BETWEEN PERCEIVED AND OBJECTIVELY
MEASURED AIR QUALITY AMONG VULNERABLE AGING ADULTS
IN SAN FRANCISCO BAY AREA

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Air pollution is a major public health issue that disproportionately affects marginalized populations. Most studies rely on sparse data from air monitoring networks rather than more precise cohort locations, and few have examined the linkages between perceived air quality, and behavior. Our study examined the relationships between perceived and objectively measured air quality in a cohort of marginalized seniors using adapted Air Quality Perception Scale (AQP) and locally measured, next-generation low-cost air quality monitor data.

As part of the NIH-funded physical activity intervention, *Steps for Change*, that focuses on vulnerable aging adults residing in affordable housing sites in San Francisco Bay Area, 14 low-cost particle monitors (Edimax Airbox AI-1001W V2, Santa Clara, CA) were deployed at 7 sites (2 monitors per site) over a 1-month period. PM_{2.5} and PM₁₀ concentrations were collected at each site at 6-minute intervals. Two monitors were collocated at each site in order to provide more reliable monitoring of PM concentrations. A total of 121 participants (83.5% female, mean age of 70.6 years old) answered the 25-question AQP. Associations between each AQP question and mean PM_{2.5} and PM₁₀ concentrations were evaluated.

Generally, the PM concentrations from the two monitors at each site were found to be positively correlated with each other. Average PM_{2.5} and PM₁₀ among sites ranged between 4.4 to 14.9 µg/m³ and 6.7 to 26.9 µg/m³, respectively. AQP questions with the greatest associations with PM_{2.5} were those that concerned nose irritation, difficulty breathing, airing out of homes, and avoiding opening windows. For PM₁₀, three AQP questions with the greatest associations included closing shutters and blinds at home, avoiding opening windows and feeling the need to wash hands or face. Differences in perceptions were consistent with larger PM₁₀ sized particles contributing to visible, dirty dust in homes, while smaller PM_{2.5} sized particles, which can travel deeper into the lungs, being related to perceived respiratory issues.

These findings suggest that some air quality perceptions of older adults are corroborated by objective PM measurements. While this is among the first studies to use low-cost sensors to systematically measure local air quality in and around older adult affordable housing sites, further research is needed to ascertain whether these perceptions alter willingness to engage in physical activity.

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6:15 PM-7:30 PM

RELIGIOSITY/SPIRITUALITY AND CARDIOVASCULAR HEALTH: THE AMERICAN HEART ASSOCIATION LIFE'S SIMPLE 7 IN AFRICAN-AMERICANS

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Introduction: African Americans (AAs) have a low prevalence of ideal cardiovascular health (CVH) (by the American Heart Association Life's Simple 7-LS7) placing them at a disproportionately high risk for CVD. Religiosity and spirituality (R/S), major coping mechanisms in the lives of AAs, have been associated with their health behaviors; however, little research has studied their effects on CVH. We examined the relationship between multiple R/S measures and CVH as assessed by the LS7 components (physical activity [PA], diet, smoking, body mass index [BMI], blood pressure [BP], cholesterol, glucose) and LS7 composite score classified as poor, intermediate and ideal in AAs.

Hypothesis: Greater levels of R/S are positively and independently associated with achieving intermediate/ideal levels of LS7 components and LS7 composite score.

Methods: Using data from the Jackson Heart Study, we examined associations of multiple domains of religiosity (religious attendance, private prayer, religious coping) and spirituality (theistic, non-theistic) with LS7 components and LS7 composite score among AAs. Multivariable logistic regression assessed the odds of achieving intermediate/ideal levels of CVH adjusted for socio-demographic, behavioral, and biomedical factors.

Results: Participants (N=2,967) were on average 54 (SD=12.3) years of age; 66% were women. Participants reported high religiosity (81% organized religion) and spirituality (Daily Spiritual Experiences Score 29.2 (4.7) [Range 6, 36]). Higher *religious attendance* was associated with increased odds (odds ratio [OR] 95% confidence interval-CI) of achieving intermediate/ideal levels for BP, PA, smoking, diet and LS7 composite score (OR [95% CI]: 1.12 [1.01-1.24]; 1.16 [1.06-1.26]; 1.50 [1.34-1.68]; 1.10 [1.01-1.20]; 1.15 [1.06-1.26], respectively). *Private prayer* was associated with increased odds of achieving intermediate/ideal levels for smoking and diet (OR [95% CI]: 1.24 [1.12-1.39]; 1.12 [1.03-1.22] respectively). *Religious coping* was associated with increased odds of achieving intermediate/ideal levels for PA, smoking, diet and LS7 (OR [95% CI]: 1.18 [1.08-1.28]; 1.32 [1.18-1.48]; 1.10 [1.01, 1.20]; 1.14 [1.04-1.24], respectively). *Theistic spirituality* was associated with increased odds of achieving intermediate/ideal levels for smoking (OR [95% CI]: 1.27 [1.13-1.43]). *Non-theistic spirituality* was associated with increased odds of achieving intermediate/ideal levels for PA, smoking, diet and LS7 (OR: 1.15 [1.06-1.25]; 1.38 [1.23, 1.55], respectively).

Conclusion: Our study suggests that AAs with higher R/S are more likely to achieve ideal CVH across multiple LS7 components. Promotion and reinforcement of R/S through lifestyle interventions could reduce overall cardiometabolic risk for CVD in this group.

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6:15 PM-7:30 PM

LONGITUDINAL EFFECTS OF FOOD INSECURITY ON MEN'S PERPETRATION OF PARTNER VIOLENCE IN SOUTH AFRICA

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Introduction: Intimate partner violence (IPV) is a leading cause of morbidity and mortality globally, with one in three women experiencing it in their lifetime. Although poverty is widely viewed as a structural driver of IPV, few studies have examined how changes in poverty influence men's IPV perpetration. One sensitive marker of poverty is food security, or the ability of households to obtain adequate nutrition. Food security is associated with IPV perpetration in two published cross-sectional studies, yet it is unclear whether this is a longitudinal relationship.

Methods: We followed a cohort of 2,479 men living in a peri-urban settlement near Johannesburg, South Africa from 2016-2018. Using self-completed audio-assisted questionnaires, men responded at baseline, 12 months, and 24 months to questions around current food security, childhood conditions, and IPV perpetration. We used cross-lagged dynamic panel modeling to assess whether food insecurity changes influenced men's IPV perpetration over time.

Results: A majority (54.4%) of men reported perpetrating IPV at baseline, but this proportion reduced over time (47.1% and 36.0% reported IPV perpetration at midline and endline, respectively). Roughly half (51.2%) of participants reported food insecurity at baseline, and this stayed consistent at midline and endline (50.3% and 55.9%, respectively). Food insecurity was higher among those men perpetrating IPV (58.3%) than among those who used no violence (42.3%, $p < 0.001$). In a cross-lagged dynamic panel model, food insecurity predicted men's use of IPV one year later, with each one-point increase in food insecurity associated with a 20% increase in IPV intensity. This longitudinal association persisted in a final model controlling for housing status (as another indicator of socio-economic status), men's exposure to childhood abuse (as a time invariant predictor), and potential bidirectionality (IPV leading to food security status). There was no evidence to suggest that IPV perpetration led to later food insecurity. In the final model, food insecurity was associated with a small, but significant, longitudinal impact on men's IPV use (standardized coefficient=0.10, $p=0.035$) and the model fit indices were strong (RMSEA=0.016, CFI=0.998).

Conclusions: Food insecurity had small but persistent longitudinal effects on men's perpetration of IPV in a peri-urban settlement in South Africa. Addressing IPV perpetration will require examination of broader structural challenges, such as livelihoods and food security, particularly in settings with endemic poverty. Future interventions should consider food security and livelihood strategies to improve health outcomes for both women and men.

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PREDICTORS OF KIDNEY TRANSPLANT EVALUATION CLINIC ATTENDANCE

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Introduction: Clinic non-attendance is a significant healthcare challenge which is associated with worse health outcomes for patients and increased burden for clinic staff and healthcare providers. During a clinical trial testing a streamlined kidney transplant evaluation (KTE) approach (completing all testing on the same day as the KTE versus the standard approach of testing that spans weeks to months), we examined whether ambivalence about receiving a transplant and other psychosocial factors predict KTE clinic non-attendance.

Methods: All patients completed an interview before their first scheduled KTE, including transplant ambivalence (i.e., “worry that transplant will do more harm than good”, rated from 1=lower to 6=greater worry), demographics (e.g., income, education), medical factors (e.g., duration of dialysis, having an identified living donor), and psychosocial factors (e.g., social support, depression). We used logistic regression analysis to determine the unique relationship between transplant ambivalence and KTE clinic non-attendance, controlling for demographic, medical, and psychosocial covariates. Variables were examined for multicollinearity before proceeding.

Results: Our sample (N=1,119) was 37% female, median age 59.4 years (IQR=49.2-67.5), 45% had income < \$25,000, 47% were ≤ high school graduate, 48% were married, and 44% had public insurance. Of note, 142 (13%) never attended a KTE clinic appointment. Adjusted multivariable modeling showed that the transplant ambivalence question (worry that transplant will do more harm than good) significantly predicted KTE non-attendance: for every 1 point increase on the item, the odds of KTE non-attendance increased by 19% (OR= 1.19; p=.05; 95% CI =1.00-1.43). Two medical factors approached statistical significance: patients without an identified living donor had higher odds of KTE non-attendance than patients having an identified living donor (OR= 1.64; p=.08; CI=.94-2.87); and patients on dialysis also had higher odds of KTE non-attendance than patients who had never been on dialysis (OR≥2.19; p=.08; 95% CI 1.08-4.46). No other variables approached significance in the adjusted model.

Conclusions: Prospectively assessing for ambivalence about kidney transplant may help identify patients who would benefit from additional support from the clinic team throughout the kidney transplant referral and evaluation process (e.g., outreach to emphasize the importance of transplant). Future research is needed to validate the use of a one-item measure to predict clinic attendance and subsequent interventions. Adding a single question regarding ambivalence during clinic scheduling may be a cost-effective and simple innovation to help address a difficult healthcare challenge.

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SOCIAL ISOLATION, SOCIAL SUPPORT, AND TREATMENT DELAYS IN BREAST CANCER PATIENTS IN AN INTEGRATED HEALTH CARE SYSTEM

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Purpose: Women diagnosed with breast cancer with greater social support have better survival but it is unclear whether this might be due in part to suboptimal treatment. We evaluated associations of social support and delays to initial surgery or to adjuvant chemotherapy in a breast cancer cohort from Kaiser Permanente Northern California (KPNC).

Methods: This study included 4,056 women from the Pathways Study diagnosed from 2005-2013 with stages I-IV breast cancer, had surgery within the first year after diagnosis, and responded to questions about social ties, personal support using the Medical Outcomes Study Social Support survey, and clinician support from the Interpersonal Processes of Care survey approximately two months following diagnosis. Level of social integration was computed from a published index of social ties. The analysis of chemotherapy delays included a subset of patients who also received adjuvant chemotherapy (N=1,721) and excluded women with neoadjuvant chemotherapy. Time to surgery was defined from the date of diagnosis to the date of definitive surgery in the KPNC Cancer Registry. Time to chemotherapy was defined from the date of diagnosis or definitive surgery to the date of chemotherapy initiation. We used logistic regression to evaluate associations with >30 day delays to surgery and >90 day (from diagnosis) or >60 day (from surgery) delays to chemotherapy and linear regression to evaluate associations with continuous outcomes.

Results: Twenty-five percent had surgery delays and 18% had chemotherapy delays (26% from the date of surgery) from time of diagnosis. Women in the lowest tertile of personal social support were more likely to have surgery (OR=1.35, 95% CI: 1.11-1.63, p-continuous=0.003) and chemotherapy (OR=1.49, 95% CI: 1.08-2.04, p-continuous=0.04) delays compared to women in the highest tertile. Women who reported low clinician support were also more likely to have surgery (OR=1.28, 95% CI: 1.06-1.55, p-continuous=0.0006) but not chemotherapy (p-continuous=0.73) delays compared to women with high clinician support. We noted suggestive but nonsignificant associations of social isolation with delays. However, women in the lowest tertiles of personal social support, clinician social support, and social integration had a nearly two-fold (OR=1.96, 95% CI: 1.30-2.95) higher likelihood of surgery delays (p-value, test for three-way interaction=0.08). Associations with chemotherapy delays from the time of diagnosis were qualitatively similar to associations with surgery delays but we noted no significant associations with chemotherapy delays when delays were measured from the date of surgery.

Conclusions: Women with low levels of social support had greater delays to surgery and chemotherapy, the latter due to surgery delays. It is important to identify patients with low support and provide support needed to ensure timely care.

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6:15 PM-7:30 PM

EXPLORING THE RELATIONSHIP BETWEEN DIABETES, STRESS, AND SELF-MANAGEMENT TO INFORM CHRONIC DISEASE PRODUCT DEVELOPMENT

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Background: Research has shown that among people with diabetes mellitus (DM), those who have difficulty coping with stress are less likely to engage in self-management behaviors and more likely to exhibit poor glycemic control and be at risk for diabetes complications.

Objective: To explore the relationship between stress and sequelae of DM among adults enrolled in a digital DM program (Livongo), in order to inform intervention and product development. Livongo provides enrolled members with a cellular-connected blood glucose (BG) meter, glucose test supplies, and digital one-on-one coaching.

Methods: The study included 3263 members, under age 65, with DM who had access to Livongo between June 2015 and August 2018. Data were collected over 24 months. Data collected at enrollment included demographics, HbA1c, duration of illness, diabetes distress (measured by DM Distress Scale), diabetes empowerment (measured by DM Empowerment Scale), and insulin use. Data collected over the 24 months included behavioral health (BH) diagnosis, BH utilization, and BG readings with self-reported stress. Members were grouped based on presence of self-reported stress and BH diagnosis/utilization. Analysis of variance (ANOVA) was used to compare continuous variables across groups, and Chi-Square test was used for categorical data comparisons.

Results: 1808 members (55%) endorsed stress at the time of at least 1 BG reading; of these, 940 (52%) also had at least 1 BH diagnosis/intervention. Members who reported stress, compared to those who did not, had greater diabetes distress (2.6 ± 1.25 v. 2.1 ± 1.11 , $p < 0.001$), lower diabetes empowerment (3.8 ± 0.79 v. 3.9 ± 0.79 , $p < 0.001$), higher insulin usage (35.1% v. 28.9% , $p < 0.001$), and poorer glycemic control throughout the study (ratio of BG readings > 180 mg/dL = 0.25 ± 0.25 v. 0.21 ± 0.26 , $p < 0.001$). Members who reported stress and had at least 1 BH diagnosis/intervention, compared to those who did not, had higher body mass index (34.7 ± 7.67 v. 32.8 ± 7.36 , $p < 0.001$) and duration of illness (9.0 ± 8.6 years v. 8.2 ± 7.86 , $p = 0.007$).

Conclusion: Stress is common among people with DM and associated with greater diabetes distress, poorer glycemic control, and worse physical health regardless of the co-occurrence of a BH condition. Digital products that focus on the whole person and integrate stress management tools, BH support, and chronic disease treatment have the promise to improve disease-specific and psychosocial outcomes.

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EXAMINING ON- AND OFF-DUTY STRESS AND TIREDNESS IN FIREFIGHTERS USING ECOLOGICAL MOMENTARY ASSESSMENT

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Firefighters are at high risk for developing cardiovascular disease (CVD), with CVD accounting for 45% of on-duty deaths in firefighters. Psychological stressors and sleep disturbances may be mechanisms involved in this increased CVD risk among firefighters. However, few studies have captured acute stress or tiredness levels or dynamic changes in stress and tiredness in a real world setting in firefighters, limiting our ability to examine relationships between stress, sleep and CVD risk. Therefore, we conducted a pilot study using ecological momentary assessment (EMA) to characterize the relationship between acute stress and tiredness in firefighters on- and off-duty. A convenience sample of 42 (38 male, 4 female; age range: 21–61 years) full-time, career Colorado firefighters completed three, eight-day periods of EMA assessments via personal smartphones. Firefighters were sent seven surveys, at random, between 8AM and 9PM on each day of EMA assessments. EMA surveys assessed current duty status (on- or off-) and stress and tiredness on a 0–100 visual analogue scale. Mixed-effects location scale models were used to examine between-subject (B-S) and within-subject (W-S) effects of duty status on acute stress and tiredness, and heterogeneity in the mean and variability of stress and tiredness. Effects of sex, age, race/ethnicity, years in the fire service, and shift type (24 or 48 hour shifts) were examined. Model fit was tested using log likelihood difference tests and analyses were completed using the MIXREGLS program which provides estimates for mixed-effects location scale models. Firefighters demonstrated significant heterogeneity in mean stress ($\mu=0.82$, $p < .001$) and stress variability ($\omega=0.81$, $p < .001$). Stress was significantly increased on-duty ($b=5.12$, $p < .001$), as was B-S variance in stress ($\alpha=0.56$, $p < .001$). There were no B-S effects of shift type on variance in stress. There were no W-S effects of duty status or shift type on variance in stress. Firefighters demonstrated significant heterogeneity in mean tiredness ($\mu=0.52$, $p < .001$) and tiredness variability ($\omega=0.65$, $p < .001$). Being on-duty ($b=1.58$, $p=.004$) and being female ($b=14.22$, $p=.007$) significantly increased tiredness. There were no B-S effects of duty status, sex, or years in the fire service on variance in tiredness. There were significant W-S effects of being on-duty ($\tau=-0.24$, $p < .001$) and serving more than the average number of years in the fire service ($\tau=-0.03$, $p=.032$) on variance in tiredness. Our findings indicate being on-duty increases acute stress and tiredness in firefighters. Serving more years in the fire service decreased W-S variability in tiredness, suggesting firefighters with more years of experience may become accustomed to the effects of firefighting on tiredness, thus demonstrating lesser variability in W-S tiredness compared to firefighters with fewer years in the fire service.

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STRESSORS FOR RETURNING CITIZENS LIVING WITH HIV AND SUBSTANCE USE PROBLEMS: A MIXED METHODS ANALYSIS

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Background: People in reentry from prison or jail (returning citizens) experience high rates of substance use disorders and HIV. During reentry, a period known to be challenging, there are high rates of return to substance use and difficulties adhering to antiretroviral therapy (ART). To better understand this challenging period, this mixed methods analysis asks: What are the leading sources of stress among a sample of returning citizens living with HIV and substance use problems? Answering this question can inform stress-management interventions.

Methods: The 75 participants were largely male (68%), African American (78%), and had an average age of 44. Fifty-eight semi-structured qualitative interviews were completed. Interviews sought to identify stressors experienced during reentry. Transcribed interviews were analyzed in NVivo, guided by a qualitative descriptive methodology. Thematic analysis was used to identify themes. Analysis of demographics was conducted to provide a more complete picture of variables that impact stress. A multiple regression analysis assessed whether age, substance use, length of time since last incarceration, length of time living with HIV, length of previous incarceration, adherence to ART and substance use treatment involvement predicted self-reported stress on the Perceived Stress Scale.

Results: Qualitative analysis found that living with HIV was a stressor due to confronting one's mortality, carving out a new identity, and difficulties establishing relationships. Adhering to ART was an additional stressor because it was a reminder of one's status and could reveal one's status to others. While people realized the necessity of disclosing their HIV status in the context of intimate relationships, it was difficult to do, and some forewent initiating partnerships due to fear of rejection and public exposure. Quantitative analysis revealed a significant regression equation ($R^2=0.23$, $F(7, 60)=2.58$, $p<.05$), with the longer a person had been in the community since release from prison or jail ($b=-0.02$, $P<.01$) and the longer a person had been living with HIV ($b=-0.30$, $p<.05$) each predicting less stress.

Conclusions and Implications: This sample of returning citizens living with HIV and substance use problems experienced stress related to living with HIV, which interfered with establishing relationships. While it was recognized that ART was important for survival, taking these medications was stressful because it was a reminder of one's status. It may be that participants had not had the time or support to accept and cope with their HIV status, an idea supported by the finding that people who had been in the community and/or were living with HIV longer had less stress. These findings highlight the need for supportive services in reentry regarding coping with living with HIV.

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GENDER DIFFERENCES IN POST-TRAUMATIC STRESS, MINDFULNESS, AND COPING IN CAREGIVERS OF NEUROCRITICAL CARE PATIENT

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Background/Objective: Informal caregivers (i.e., friends and family providing the bulk of support) of neurosciences intensive care unit (Neuro-ICU) patients are at a heightened risk for developing chronic post-traumatic stress (PTS). While resiliency factors show promise in protecting against chronic PTS development, the effect that resiliency factors and caregiver gender have on PTS at hospitalization and overtime has not been explored. This prospective study examined main effects and interactions of resiliency and gender on the trajectory of PTS symptom severity at three timepoints (baseline at hospitalization, 3, and 6 months post-discharge).

Methods: Caregivers ($N=96$; X biologically female; mostly White, well-educated, and coupled) were enrolled from a major northeastern academic medical center. Caregivers reported sociodemographic variables, resiliency factors (mindfulness, self-efficacy, intimate care, preparedness for caregiving, and coping) and PTS symptom severity in the hospital (baseline), and PTS symptom severity (only) post-discharge (3 and 6 months).

Results: Baseline PTS was predictive of higher PTS symptom severity at 3 and 6 months. Caregivers with high (vs. low; median split = low < 34; high ≥ 34) levels of mindfulness, coping (low < 32; high ≥ 32), and self-efficacy (low < 88.67; high ≥ 88.67) had lower PTS symptoms at baseline (i.e., $p=0.003$, $p=0.002$, $p=0.005$, respectively). No additional main effects for caregiver gender or resiliency were found at 3 or 6 months. A significant interaction between mindfulness and gender, as well as intimate care and gender were seen for PTS at 3 and 6 months. At 3 months, we found a significant interaction of mindfulness and caregiver gender onto PTS, $F(1, 71)=4.68$, $p<0.03$, $\eta^2=0.06$, with males high in mindfulness having lower PTS symptom severity ($M=26.15$, $SE=2.34$) compared to females with high mindfulness ($M=33.24$, $SE=1.95$), $F(1, 71)=5.80$, $p<0.019$, $\eta^2=.076$. Males low in mindfulness had higher PTS symptom severity ($M=29.73$, $SE=2.39$) than females low in mindfulness ($M=27.85$, $SE=1.89$), $F(1, 71)=.372$, $p<.544$, $\eta^2=0.005$. Furthermore, we found a significant interaction between intimate care and caregiver gender on PTS at 6 months $F(1, 66)=4.69$, $p<0.034$, $\eta^2=0.066$, with male caregivers with high intimate care reporting low levels of PTS symptom severity ($M=24.49$, $SE=2.31$), as compared to female caregivers ($M=32.25$, $SE=1.85$), ($M=32.25$, $SE=1.85$), $F(1, 66)=4.35$, $p<0.041$, $\eta^2=0.062$.

Conclusions: Findings highlight the importance of assessing and addressing PTS in caregivers of patients hospitalized in the Neuro-ICU. Interventions focused on teaching resiliency skills before the patients get discharged may be able to prevent chronic PTS in caregivers. Males may particularly benefit from interventions focused on increasing mindfulness and intimate care.

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EXPLORATORY STUDY ON ALCOHOL USE AND HIV TREATMENT ADHERENCE AMONG LATINOS LIVING WITH HIV IN THE SAN DIEGO-TIJUANA BORDER REGION

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Alcohol use among persons living with HIV has been linked to suboptimal adherence to antiretroviral therapy (ART) and poor health outcomes. At a population level, this may translate to HIV transmission risk if individual-level viral loads are not suppressed. Drinking behavior is often influenced by cultural norms surrounding alcohol drinking practices and may differ in the U.S.-Mexico border region where patterns of substance use may also differ from patterns in each respective country's interior. Research is lacking on alcohol use risk and health outcomes among persons living with HIV in the U.S.-Mexico border. We undertook the current study with HIV-positive Latinos in the San Diego, U.S.-Tijuana, Mexico border region to elucidate the association between recent alcohol use and HIV treatment adherence. We conducted secondary data analysis with data from a U.S.-Mexico binational parent study designed to explore barriers and facilitators to HIV care through interviewer-administered surveys. This cross-sectional study recruited a convenience sample of HIV-positive Latino adults ($N=201$) from agencies in San Diego and Tijuana. We hypothesize that participant's recent report of alcohol consumption history over the past three months would be associated with suboptimal ART adherence and differ by country of residence. Associations between alcohol consumption and ART adherence were determined by logistic regression. Our analysis revealed that alcohol consumption in the prior 3 months was associated with lower adherence to ARV, after adjusting for country of residence and cross-border activity. Over all, 36% participants who used alcohol while maintaining primary residence in the US in the last 6 months reported missing ARV medication (in the last month). This was significantly higher ($p \leq 0.001$, 95% CI) than the 34% participants missing ART, who lived in Mexico and reported drinking. With regards to cross-border mobility, 26% who used alcohol and revealed round trip border crossings (in prior 6 months), reported missing ARV medications in the last month. This was significantly higher ($p \leq 0.001$, 95% CI) than the 14% participants missing ART, who crossed border but did not drink alcohol in the last 3 months. Findings indicate that alcohol use in this border population of HIV-positive Latinos is of concern and merits further study to understand the role that alcohol consumption patterns may play in suboptimal ARV adherence in a U.S.-Mexico border context.

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INTENTION TO MISUSE PRESCRIPTION OPIOIDS IS ASSOCIATED WITH PRIOR OPIOID USE AND PRESCRIPTION OPIOID MISUSE PERCEPTIONS

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Prescription opioid misuse, addiction, and overdose among young adults have contributed to the nationwide opioid crisis. Identifying perspectives about prescription opioids that are associated with, and predictive of, misuse can inform preventive policies and interventions. This study assessed attitudes and behaviors associated with two sets of intentions that may precede prescription opioid misuse: intentions to misuse prescription opioids and intentions to save leftover prescription painkillers for future use.

Members of a nationally representative, longitudinal cohort aged 15-24 years old participated in an online survey from February to May 2018 ($N=12,374$). Intentions to misuse was measured with four items, such as "If I was not in physical pain and a friend offered me a prescription painkiller, I would take it." Intentions was dichotomized for analysis, with 0= "Do not agree" to all four items and 1= "somewhat agree" to at least one item. Agreement to the item "I would save my leftover prescription painkillers 'just in case'" was similarly dichotomized. Logistic regression models tested for association with the outcomes with prior prescribed use of opioids, prior misuse, perceived risk of harm from misuse, demographic measures and attitudinal constructs: sentiment about companies making prescription painkillers, desire to be a part of the solution of the opioid epidemic, and social acceptance of those with addiction to opioids.

Intentions to misuse was associated with prior prescribed use (3 or more prescriptions, $OR=1.48$, 95% $CI=1.24-1.77$), prior misuse of prescription painkillers ($OR=3.75$, $CI=3.07-4.58$), lower perceived risk of harm ($OR=3.58$, $CI=2.64-4.87$), stronger anti-company sentiment ($OR=1.29$, $CI=1.18-1.40$), weaker feelings about being part of the solution ($OR=0.74$, $CI=0.68-0.80$), and greater social acceptance of those with addiction ($OR=2.0$, $CI=1.82-2.19$). Results for intention to save were similar, but there was no significant association with anti-company sentiment. Additionally, intention to save was strongly associated with agreement with items measuring social norms around misuse, such as "It's not a big deal if my friends use prescription painkillers without a doctor telling them to." ($OR=5.47$, $CI=4.25-7.03$).

Interventions targeting attitudes about prescription opioids, such as perceived risk of harm from misuse and desire to be part of the solution to the opioid epidemic, may help reduce risk of prescription opioid misuse in young people.

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BEHAVIOR CHANGE TECHNIQUES USED IN BINGE DRINKING INTERVENTIONS AMONG COLLEGE STUDENTS: A SYSTEMATIC REVIEW

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Background: While there have been several systematic reviews published on the effects of binge drinking interventions among college students, very few have reported the behavior change techniques (BCTs) utilized within these interventions.

Purpose: The purpose of this study was to systematically review the literature of college binge drinking interventions, and code the use of theory and BCTs to make recommendations for future researchers and practitioners.

Methods: A taxonomy of 93 hierarchical BCTs was utilized to code the interventions. To search for articles, authors followed the PRISMA guidelines and examined peer-reviewed journal articles detailing a program or intervention targeted to college students, with binge drinking behaviors as the outcome. Eleven electronic databases were used (i.e. CINAHL, Academic Search Complete, and MEDLINE), using key words 'binge drinking,' 'interventions,' and 'college students.' Articles were published between 2014-2019.

Results: Originally, 408 articles were identified from the search, however after applying exclusion criteria (i.e. based on a qualitative study, or did not describe an intervention and/or include results), nine articles were included in the review. Out of the nine studies, only two interventions were based on formal theories; one was based upon the Prospect Theory, while the other was based upon the Theory of Planned Behavior. Additionally, a total of 27 different BCTs were identified, with the most frequently coded BCTs being *Information about health consequences* (BCT 5.1) and *Information about social and environmental consequences* (BCT 5.3), appearing in six of the nine studies. On average 5.7 BCTs (+/-1.8) were reported per article.

Conclusions: This review has implications for the field of public health and behavioral medicine, as the results indicate the use of theory and BCTs needs to be expanded and refined in the literature. Specifically, researchers need to clearly delineate what methods they are employing to produce behavior change (i.e. BCT) and identify why they chose such techniques (i.e. identifying appropriate mechanisms of action). BCTs require more exposure in the field as they provide insight into effective interventions targeting health behaviors beyond binge drinking.

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ABUSE, EMOTION DYSREGULATION, AND NEGATIVE ALCOHOL-RELATED OUTCOMES IN AFRICAN AMERICAN YOUNG WOMEN

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Having a history of abuse and elevated emotion dysregulation (ED) severity are associated with negative alcohol-related outcomes (NARO), and ED may mediate the relation between abuse and NARO. However, no studies have explicitly examined these relations among African American young women. Thus, the aim of this study was to identify the relations between abuse, ED, and NARO among African American young women who use alcohol. We analyzed baseline data from the N-LITEN study, an STI/HIV prevention intervention for African American young women. Participants were women who self-identified as African American ($N = 560$), were 18-24 years old (M age = 20.58, $SD = 1.89$), consumed alcohol ($\geq 3x$) in the past 90 days, and reported condomless vaginal or anal sex with a male partner in the past 90 days. *History of abuse* was assessed using a categorical (yes/no) measure of emotional, physical, and sexual abuse and coded to indicate a) no abuse, b) single form of abuse, and c) multiple forms of abuse (i.e., two or more). *Problematic alcohol use* was assessed using the Alcohol Use Disorder Identification Test (AUDIT). *ED* was assessed using the Shedler-Westen Assessment Procedure (SWAP-200), Factor 5: Emotional Dysregulation scale. Nearly half (49.8%) of this sample reported a history of abuse and 67% of those with an abuse history endorsed experiencing multiple forms of abuse. Linear regression analyses evaluated hypotheses that exposure to a greater number of forms of abuse would be independently associated with higher AUDIT and SWAP-200 scores. Only history of multiple forms of abuse was associated with higher AUDIT scores, $\beta = .24$, $p < .001$, relative to no abuse. Both history of single form of abuse, $\beta = .15$, $p < .001$, and multiple forms of abuse, $\beta = .40$, $p < .001$, were associated with higher SWAP-200 scores relative to those reporting no abuse. Mediation analysis observed a small indirect effect of single abuse on AUDIT scores, $B = .54$, $SE = .22$, 95% CI [.16, 1.02], $ab_{ps} = .07$, $SE = .03$, 95% CI [.02, .12], with a moderate indirect effect of multiple forms of abuse on AUDIT scores, $B = 1.08$, $SE = .34$, 95% CI [.46, 1.64], $ab_{ps} = .13$, $SE = .04$, 95% CI [.06, .22] via ED relative to those reporting no abuse. In this sample, only exposure to multiple forms of abuse was independently associated with NARO, whereas any abuse exposure was associated with higher ED. Greater screening for ED and problematic alcohol use is needed for abuse-exposed African American young women.

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THE INFLUENCE OF SOCIAL EXCLUSION AND PERCEIVED NORMS ON COLLEGE STUDENTS' WILLINGNESS TO BINGE DRINK

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Social exclusion is a painful experience that increases negative affect and depletes fundamental human needs, including feelings of belonging, self-esteem, meaningful existence, and self-control (Williams, 2007). Previous literature suggests that exclusion also affects physical health by increasing willingness to use substances such as alcohol (Stock et al., 2015). However, no research has specifically examined whether social exclusion influences cognitions associated with binge drinking on college campuses, a highly common but dangerous behavior (NIAAA, 2015), and whether this is moderated by perceived drinking norms. College students' binge drinking is primarily socially motivated (Colby et al., 2009) and therefore likely to be influenced by social experiences. The present study examined whether social exclusion and perceived norms affect college students' binge drinking cognitions. Students reported their descriptive and injunctive norms about drinking in an online survey. At least one week later, participants visited the lab and were randomly assigned to be included or excluded by peers in the online ball-tossing game Cyberball (Williams & Jarvis, 2006). After, negative affect, fundamental needs, and their willingness and intentions to binge drink were assessed.

There was no main effect of social exclusion on binge drinking cognitions. However, significant interactions between exclusion and injunctive norms predicted binge drinking cognitions, such that exclusion led to *lower* willingness to binge drink at higher levels of injunctive norms ($b=-.19$, $p=.007$). Moderated mediation analyses found an opposite, indirect pathway at higher levels of injunctive norms, in which exclusion led to greater willingness to binge drink via more negative mood ($\beta=.44$, CI: .14, .75). However, these analyses also showed another indirect pathway at lower levels of injunctive norms, where exclusion led to greater willingness to binge drink via lower satisfaction of fundamental needs (i.e., belonging, self-esteem, meaningful existence, and self-control; $\beta=.69$, CI: .21, 1.14). There were no significant interactions between social exclusion and descriptive norms on binge drinking cognitions.

These findings indicate that college students show greater inclination for what they perceive to be non-normative drinking behavior following social exclusion. College campuses should facilitate activities to promote inclusion and discourage high injunctive norms about binge drinking.

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A SYSTEMATIC REVIEW OF COMPREHENSIVE SUBSTANCE ABUSE INTERVENTIONS FOR INDIVIDUALS AFFECTED BY VIOLENCE AND TRAUMA

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Violence victimization is common among men and women who use substances and is associated with co-occurring health issues such as PTSD, depression and HIV. Substance use interventions, therefore, should include integrated components that are designed to address co-occurring health issues among victimized substance-using individuals. This systematic review synthesized the evidence on efficacy of comprehensive, integrated, multicomponent interventions for victimized substance-using individuals. The efficacy of integrated multicomponent intervention strategies was assessed for the following syndemic conditions: mental health, substance misuse, violence, and HIV risk. We searched six academic literature databases, namely Pubmed/MEDLINE, PsycInfo, the Cochrane Register of Controlled Trials (CENTRAL), Embase, ISI Web of Science and CINAHL. The search strategy contained key terms describing violence, mental health, HIV, substance misuse, and randomized controlled trials. Electronic searches identified 13,948 results from academic literature databases (Pubmed $n=2790$, PsycINFO $n=3653$, CENTRAL $n=688$, Web of Science $n=2785$, Embase $n=3217$, CINAHL $n=815$) and 9 articles identified through cross-referencing included articles. Once duplicates were removed ($n=5922$), we reviewed the titles and abstracts of 8035 articles. Sixty-one of these were retained for full text review. After the full texts of these articles were reviewed against our eligibility criteria, we determined that 17 articles were relevant. Examples of effective components were empowerment strategies for violence, mindfulness-based stress reduction for mental health, social cognitive skill building for addressing HIV risk and psychoeducation for substance misuse. Although in this review, some components were found to be effective, we identified methodological limitations of included studies which calls for more rigorous research in this area. Further, there is lack of evidence base for multicomponent interventions for victimized substance-using individuals in developing countries. Additional studies are needed to establish rigorous evidence base for multicomponent interventions for victimized substance using individuals that help them cope effectively with their trauma of violence and address their needs.

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ASSOCIATIONS BETWEEN OPIOID MISUSE ATTITUDES, INTENTIONS, AND BEHAVIORS, AND THE MODERATING EFFECT OF MENTAL HEALTH

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Opioid misuse has increased over the past several years, and those with mental health disorders are at greater risk for misuse. This study assesses associations between attitudes towards and intentions to misuse prescription opioids, and subsequent misuse among youth/young adults.

Members of a nationally representative, longitudinal sample (ages 15-34 at baseline) were surveyed online in Spring 2018 (T1) and Spring 2019 (T2). Attitudes related to acceptance of misuse and intentions to misuse were measured at T1 and by taking the average of 3 items measured on a scale ranging from *I=do not agree* to *4=very strongly agree*. Acceptance of misuse was measured by items such as, "It's not a big deal if my friends use prescription painkillers without a doctor telling them to" ($\alpha=0.67$), while intentions to misuse was measured by items such as, "If I got a prescription painkiller from the doctor, I would share some with my friends" ($\alpha=0.80$). Misuse of prescription opioids was measured at T2 with: "In the past 12 months, on how many occasions (if any), have you taken prescription painkillers without a doctor specifically prescribing them to you?" Reported use on 1 or more occasion was defined as misuse. Anxiety and depression were measured at T1 using the Generalized Anxiety Disorder Scale and the Child Behavior Checklist. Analyses were restricted to those had never misused prescription opioids at T1 (N=8,951). Adjusted logistic regression models assessed associations between attitudes and intentions at T1 and opioid misuse at T2, as well as the moderating effect of anxiety and depression.

Results indicated significant associations between attitudes and intentions and subsequent prescription opioid misuse. For each standard deviation increase in acceptance of misuse and intentions to misuse, the odds of misuse were 1.44 and 1.31 times greater, respectively. Black and Hispanic race/ethnicity, lower SES, and higher levels of anxiety and depression were also significant predictors of misuse. Subsequent conditional models did not produce significant interaction effects.

Significant relationships between acceptance of and intentions to misuse and prescription opioid misuse suggests that interventions targeting these constructs may be successful at changing misuse behavior. Anxiety and depression were not significant moderators of these relationships, suggesting that while such interventions might work for all individuals, regardless of mental health status, more research is warranted.

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HOW SELF-ESTEEM AND CHALLENGE APPRAISAL AFFECT ALCOHOL-RELATED BELIEFS, BEHAVIORS, AND CONSEQUENCES

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This study examined how global self-esteem (GSE), contingent self-esteem (CSE), and challenge appraisal (CA) relate to alcohol beliefs, drinking behaviors, and consequences among municipal firefighters. Although self-esteem typically refers to a stable positive or negative attitude toward the self (Rosenberg, 1965), Kernis et al. (2008) used the term *fragile high self-esteem* to describe people who report possessing high self-esteem, but who also report holding these beliefs tenuously or variably, harbor insecurities that belie their explicit self-evaluations, and react defensively to negative feedback about the self (Kernis et al., 2008). This portrait differs from a more genuine, non-defensive sense of high self-esteem.

Blascovich, Tomaka, et al. have suggested that individuals who appraise novel, potentially stressful events as challenging experience significant benefits compared with those who appraise such events as threatening (Blascovich & Tomaka, 1996; Seery 2011). CA reflects an assessment that situational demands fall within one's ability to cope, whereas threat appraisal reflects the converse: That situational demands tax or exceed one's ability to cope. Several decades of research have related CA with favorable emotional, physiological, and behavioral outcomes (Blascovich, 2009).

The present study hypothesized that CSE would relate positively to alcohol consequences and facilitating beliefs (motives and expectancies), whereas GSE and dispositional challenge relate negatively to such outcomes. Municipal firefighters (N = 737) completed measures of GSE, CSE, CA, alcohol risk, alcohol-related problems, drinking motives, and alcohol expectancies as part of their participation in a regularly scheduled training session. The predictors intercorrelated moderately ($r = .32^*$ to $.43^*$). Regression analyses showed GSE to predict unique variance in alcohol problems ($\beta = -.09^*$), drinking to cope and conform ($\beta's = -.14^*$ and $-.09^*$), and tension reduction, enhanced sexuality, and negative self-evaluation expectancies ($\beta's = -.09^*$, $-.14^*$, and $-.09^*$). In contrast, CSE predicted unique variance in alcohol risk scores and alcohol problems ($\beta's = .08^*$ and $.12^*$), all four drinking motives ($\beta's = .21^*$, $.17^*$, $.14^*$, and $.19^*$), and six of seven alcohol expectancies ($\beta's = .08^*$ to $.19^*$). Finally, CA predicted unique variance in alcohol problems ($\beta = -.09^*$), drinking for social, coping, and conformity motives, ($\beta's = -.13^*$, $-.15^*$, and $-.11^*$), and tension reduction, courage, sexuality, and negative self-evaluation expectancies ($\beta's = -.09^*$, $-.13^*$, $-.15^*$, and $-.11^*$). Overall the results showed that GSE and CA to be associated with lower alcohol risks, whereas CSE enhanced such risks. Efforts to reduce alcohol-related consequences might focus on increasing promoting genuine self-esteem and encouraging challenge appraisal of life events.

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DRIVING UNDER THE INFLUENCE OF CANNABIS, OTHER DRIVING RISK BEHAVIORS, AND THE FIVE-FACTOR MODEL OF PERSONALITY

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Background: Currently, 34 U.S. states permit medical use of cannabis and 10 states permit recreational use. Changes in the legal status of cannabis could lead to greater instances of driving under the influence of cannabis (DUI-C). Understanding correlates and predictors of DUI-C could improve prevention programs.

Method: The present study assessed DUI-C as well as engagement in distracted driving risk behaviors such as texting while driving and the dimensions of the five factor model of personality in a diverse sample of 763 young adult college students (ages 18-25). Participants were recruited in a state that does not permit either medical or recreational use of cannabis.

Results: Overall, 31% reported cannabis use in the prior 3 months, 22% reported lifetime DUI-C and 12% reported DUI-C in the past 3 months. Participants who reported lifetime DUI-C were also more likely to report lifetime driving under the influence of alcohol (69%) compared to those who did not report DUI-C (10%), $\chi^2(1, N = 763) = 221.23, p < .001$. Participants who reported lifetime DUI-C were also more likely to report texting while driving in the past week (63%) compared to those who did not report DUI-C (48%), $\chi^2(1, N = 763) = 11.72, p < .001$. In univariate analyses, participants who reported DUI-C scored significantly higher in neuroticism and openness to experience, and significantly lower in conscientiousness, compared to individuals who did not report DUI-C. The two groups did not differ in extraversion or agreeableness. In a multivariable logistic regression analysis controlling for age, gender, race, and car ownership, openness to experience was a significant risk factor for lifetime DUI-C (OR = 1.06, 95% CI = 1.02, 1.11) and conscientiousness was a significant protective factor for lifetime DUI-C (OR = 0.92, 95% CI = 0.87, 0.98).

Discussion: Findings suggest that DUI-C co-occurs with other high-risk driving behaviors and that personality factors have utility in predicting DUI-C. Public health interventions designed to increase driving safety may wish to focus attention on this type of drugged driving.

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EXPOSURE TO PERSONAL AND COMMUNITY VIOLENCE AND ASSOCIATED DRUG USE OUTCOMES

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Background: Exposure to violence (ETV) during one's life has been associated with increased risk for substance abuse. Indeed, ETV is often found to be an independent risk factor from gender, ethnicity, other mental health diagnoses, and family circumstances. Adolescent exposure to violence is also related to substance abuse into adulthood and has been shown to have a cumulative effect. The current study adds to the understanding of how exposure to violence relates to a range of substance use outcomes and examines how this exposure interacts with other life stressors, and health and social experiences.

Method: Factor analysis was conducted to identify unique types of exposure to violence in 638 young adult (ages 18 to 25 years old) African American men and women. The resulting factors represent 1) childhood exposure to violence and 2) community exposure to violence as adults. These were regressed upon substance abuse outcomes; separate regressions were run for males and females to identify how the effects of ETV factors on the overall population compare with those among males and females.

Results: 78% of the respondents were exposed to some forms of violence during childhood and only 14% did not experience any forms of violence either as children or young adults. Within the whole sample and within gender, lower childhood ETV were significantly associated with a lower risk of engaging in dangerous substance use behaviors. Adult experiences of community violence had more significant predictors of drug use than childhood ETV. For both genders, witnessing gunfire or an assault, witnessing or being a victim of sexual assault, and carrying a weapon were consistent risk factors for dangerous drug behaviors, although specific drug use behaviors differed across genders.

Conclusions: Exposure to violence in this population of young adult African Americans served as an independent explanatory factor for specific drug use behaviors at different stages of life. Future research is needed to understand how these factors put respondents at risk for drug use behaviors or make them less likely to engage in dangerous use patterns.

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TECHNOLOGY AND TELEPHONE-BASED SMOKING CESSATION TREATMENT FOR VETERANS WITH POSTTRAUMATIC STRESS DISORDER

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Significance: Military veterans with PTSD have smoking prevalence that exceeds 40%, two to three times that of the U.S. population. VA researchers developed an integrated care (IC) treatment protocol developed specifically for smokers with PTSD, consisting of trauma-informed cognitive behavioral therapy plus evidence-based pharmacotherapy. IC was found to double quit rates in a randomized controlled trial (RCT) of 943 veterans with PTSD when compared to VA smoking cessation clinic treatment. However, 53% of participants receiving IC did not attend all 8 treatment sessions. Moreover, office-based care is inaccessible for veterans residing in rural and remote areas. Innovative adaptations to the IC protocol may enhance treatment engagement and improve access. We aimed to examine whether adapting IC to be delivered via telephone and video would result in equivalent treatment attendance to office treatment in veterans with PTSD.

Methods: In this RCT, 20 veteran smokers with PTSD were randomized to receive the IC CBT protocol either via office-based, weekly visits (control group) or telephone or video visits (experimental group). Both groups were offered smoking cessation pharmacotherapy per current treatment guidelines. The experimental group received weekly sessions via either telephone or video, per their preference.

Results: Participants were 20 veterans (90% male), ages 28-68 ($M=49.80$, $SD=14.68$). At baseline, groups did not differ by age ($F=0.26$, $p=.618$) or FTND nicotine dependence severity ($F=2.66$, $p=.121$). There was, however, a difference in self-reported baseline smoking ($F=7.63$, $p=.013$), with control participants smoking significantly more cigarettes per day ($M=12.67$) than experimental participants ($M=6.96$). Analyses revealed no significant between-group differences in mean number of sessions attended ($F=0.56$, $p=.465$). Participants in the phone/video-based experimental condition attended a mean of 5.00 ($SD=3.06$) sessions. Control participants attended a mean of 5.90 ($SD=2.28$) in-office sessions. There were no significant condition differences for any of the eight treatment satisfaction questions (all p 's $> .150$). However, there was a large effect size (suggesting clinical significance) for overall treatment satisfaction ($F=2.29$, $p=.150$, $\eta^2=.125$), with participants in the phone/video-based experimental condition reporting greater satisfaction. Condition differences in intervention outcomes will also be analyzed and discussed.

Conclusions: Results indicate that delivery of IC via telephone or video visits with veteran smokers with PTSD is feasible, with equivalent rates of attendance in both groups. We also observed a large effect size for overall treatment satisfaction in the experimental condition. Adapting the IC protocol using innovative, convenient approaches may improve acceptability while also increasing treatment access.

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ASSESSING THE ROLE OF RISK PERCEPTION IN SMOKING CESSATION: A COMPARISON OF CAUSAL- VS. TRADITIONAL STATISTICAL BASED MODELING.

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Introduction: Direct Acyclic Graphs (DAGs) can be used to visually explore causal relationships between variables in observational datasets and identify the presence of confounding based on prior knowledge and underlying assumptions. Here, we present a comparative analysis of DAGs to traditional statistical methods to identify and adjust for sources of confounding when assessing the relationship between risk perception and smoking cessation.

Methods: We analyzed data from adult cigarette smokers ($n=11,402$) in Waves 1-3 of the Population Assessment of Tobacco and Health study (PATH). The exposure was defined as the perceived health risk of cigarettes at Wave 1. The outcome was smoking cessation, defined as "former established smokers, who did not smoke at all in last 30 days" at Wave 3. We used two different approaches which considered the same initial set of 15 independent variables in order to assess the extent of a causal relationship between perceived risk and subsequent smoking cessation. The first approach was based on traditional statistical strengths-of-association-based methods, aiming to find the best multivariable logistic regression model based on model-fit and p-values. Whereas, for the second approach, a DAG was constructed to present the causal relationship between the exposure and the outcome and to find the minimal sufficient adjustment set of variables for the logistic regression model.

Results: At Wave 3 the follow-up cohort consisted of 8,575 out of which 1,018 participants had quit smoking. The results of the two approaches were systematically compared in regard to the overlap of several variables in the final logistic regression models, as well as the resulting Odds Ratio. The minimal sufficient adjustment set derived from the initial DAG had 5 variables, whereas the number of variables which stayed in the final logistic regression model derived by the traditional statistical approach were 8-11, depending on the specific procedure. We also compared the overall models with respect to plausibility and consistency with previous findings, as well as their model-fit.

Discussion: The findings showed that DAGs may be preferable to traditional statistical approaches as a means to minimize bias through inappropriate adjustments for confounding. This is especially relevant for complex research questions such as the current example aiming to delineate the intricate causal mechanisms between risk perception and smoking cessation.

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UNIVERSITY STUDENTS' ATTITUDES TOWARDS TOBACCO-FREE POLICIES ON CAMPUS

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The adoption of a tobacco-free campus policy is one strategy by which colleges and universities can prevent tobacco use and reduce its long-term health effects among students. In efforts to understanding students' attitudes toward tobacco-free campus policies and identify potential obstacles to implementing tobacco-free campus policies, a mixed methods approach was used. Research methods included "man on the street" interviews, focus groups, and a campus-wide online survey. To be eligible to participate, individuals had to be age 18 or older and currently enrolled at a four-year, urban, public university in the Mid-Atlantic region of the United States. Support for a tobacco-free campus policy was influenced by demographic characteristics (sex, race/ethnicity, and year in school), current use, and attitudes towards smoking and vaping. Although most students expressed support for policies that "ensure smoke-free air to breathe" or "reduce the risk of tobacco addiction," a number of obstacles to the adoption and enforcement of such policies were identified. These involve addressing the personal rights of tobacco users, unclear campus boundaries in an urban environment, and the growing prevalence of e-cigarette use among young adults. Students suggested that the best way to frame communication for the adoption and implementation of a tobacco-free campus policies was to focus on health benefits associated with such policies. Results highlight the importance of incorporating the student perspective into planning for a tobacco-free campus policy.

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FEASIBILITY OF A VIDEO TEXTING PROGRAM FOR AFRICAN AMERICAN SMOKERS ENROLLED IN A STATE QUITLINE

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Significance: Pervasive smoking-related health disparities exist across racial/ethnic and socioeconomic status groups in the US. African Americans, in particular, suffer disproportionately from tobacco-related illnesses. African American smokers prefer culturally specific interventions and report greater quit attempts and smoking reduction when offered these interventions. Path2Quit is a culturally specific video text messaging intervention for African American smokers. Digital interventions are common, but inequality in technology capabilities and digital literacy may preclude them from being utilized by some racial/ethnic minorities. The purpose of the present study was to evaluate feasibility of offering a digital intervention (Path2Quit) to state quitline enrollees.

Methods: Enrollees into the Louisiana State Tobacco Quitline in early 2019 who were African American with a mobile phone were contacted for screening. Eligible participants were enrolled into the automated program that sent messages twice per day with links to online video clips. Phone surveys were conducted 6 weeks post enrollment.

Results: Of the 45 screening candidates interested in the study, 10 were ineligible (22.2%) due to no wireless access (60%), not willing to watch videos (40%), or no video viewing capacity on mobile phones (30%). Of the 35 participants who enrolled in Path2Quit, 37% were female and average age was 55 ($sd = 10.6$). Participants were primarily single (69%) with education ≤ 12 years (68%) and smoked 16 cigarettes per day on average. Follow-up survey respondents ($n = 27$, 77% response rate) reported receiving texts with links to videos (25/27) and watching the videos (24/25). Respondents were highly satisfied with the program ($m = 6.4/7$, $sd = .95$) and 92% would recommend the program. Path2Quit was rated as highly useful ($m = 6.5/7$, $sd = 1.7$) and 21/24 (88%) reported taking action based on the videos. Texts and videos were rated as highly informative ($m = 6.16/7$), relevant ($m = 6.2/7$), and trustworthy ($m = 6.7/7$). Most (92%) agreed that the program increased their intention to quit and that they had made a serious effort to quit, and 14/27 (52%) had quit at the time of follow up. Few participants responded to interactive questions via text and several participants noted receiving error messages when trying to do so.

Conclusions: One fifth of quitline enrollees who were interested in the texting program did not have the technology to use it. Those who enrolled in Path2Quit found the video program useful and acceptable, although several experienced technical difficulties. Simplifying interactive components of the program may increase engagement. Further research is needed to evaluate efficacy in this population.

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ESTABLISHING CROSSWALKS BETWEEN A NEW AND EXISTING PERCEIVED DEPENDENCE MEASURES ON TOBACCO AND NICOTINE CONTAINING PRODUCTS

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Background: Many self-reported measures are available for assessing the level of perceived dependence on specific tobacco- and nicotine-containing products (TNP), notably cigarettes. However, such product-specific measures are not fit-for-purpose for assessing dependence across diverse TNPs and in users of multiple TNPs. The ABOUT–Dependence instrument was developed to address this gap and provide comparable measurements of perceived dependence associated with the use of different TNPs. The objective of this study was to develop crosswalks between the scores of ABOUT–Dependence and existing product-specific dependence measures.

Methods: A sample of adult TNP users in the USA (N = 2434; 40% female) participated in an online survey and completed the ABOUT–Dependence instrument and other perceived dependence measures according to their current TNP-use patterns (i.e., the Fagerström Test for Nicotine Dependence [FTND], Penn State Electronic Cigarette Dependence Scale [PS ECIGDI], Cigarette Dependence Scale short version [CDS-5], Lebanon Waterpipe Dependence Scale [LWDS], and Brief Wisconsin Inventory Dependence Measure [WISDM-brief]). The composite scores of ABOUT–Dependence were co-calibrated with those of each of the other measures by psychometric analysis using the Rasch model. This procedure allowed the transformation of raw scores from various existing product-specific instruments to a common metric established by the new instrument.

Results: The ABOUT–Dependence instrument provided a more comprehensive and interpretable measure of perceived dependence by referring to individual item and response category locations for each of its three domains — *extent-of-use*, *symptoms*, and *behavioral impact*. In addition, the ABOUT–Dependence yielded better resolution than the product-specific questionnaires; for example, a score of 2 on the FTND is equivalent to a score of 12 on ABOUT–Dependence, whereas scores of 10–14 on the ABOUT–Dependence all map to a score of 2 on the FTND.

Conclusions: The ABOUT–Dependence instrument provides a reliable and sensitive measure of perceived dependence for different types of TNP users. The crosswalk developed in this study allows conversion of scores from the new instrument to established product-specific instruments and can be used for comparing perceived dependence at a group-level across studies that have used different self-reported measures.

Keywords: dependence, tobacco- and nicotine-containing products, Rasch model

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ELECTRONIC CIGARETTE BRANDS: AWARENESS, USE, AND OWNERSHIP AMONG U.S. YOUTH AND YOUNG ADULTS

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E-cigarette use among teens in the US increased 78% between 2017 and 2018; from 12% to 21%. In December 2018, the US Surgeon General declared e-cigarette use among youth an epidemic. Regardless of voiced concerns, aggregated sales of e-cigarettes are expected to reach approximately \$9 billion in 2019, with market leader Juul expected to take over two-thirds of the market. Given the importance of brand awareness and its relationship to consumer behavior and product demand, it is critical to understand patterns of brand awareness, e-cigarette use, and ownership among different demographic subgroups of young people.

We conducted a cross-sectional, national survey of young people aged 15-24 (n=1549) using an online opt-in panel. Ever-use of e-cigarettes and recognition of 14 major brands of e-cigarettes was assessed. Participants who reported ever-use of e-cigarettes and awareness of at least one brand were then asked to report if they had ever used, currently used, or owned a device from each brand that they reported having recognized.

JUUL was the most recognized brand of e-cigarettes; 70% of 15-17-year-olds, 65% of 18-21-year-olds, and 59% of 22-24-year-olds recognized the brand. Other top brand recognitions included blu (35% recognition overall), Vuse (22%), and SMOK (21%). JUUL was also the most used brand (33% and 22% ever- and current-use) followed by SMOK (13% and 8.8% ever- and current-use). Among those who responded never having used an e-cigarette, 67% still reported recognition of at least one brand of e-cigarette. Among those who reported ever-use of e-cigarettes, 49% reported that they do not own their own device, suggesting that sharing with friends is a major component of understanding this epidemic.

Given the market domination of one brand and its high rate of recognition among young people, it becomes ever more important to understand how brand awareness affects purchasing choices, and repurchasing intentions. In addition, current and future results help inform an understanding of the appeal of different brands by demographic subgroups of young people. From a policy standpoint, results aid in the formulation of strategies to curtail marketing and product dissemination.

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HARM AND ADDICTION PERCEPTIONS OF ELECTRONIC CIGARETTES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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With the rapid uptake of electronic cigarettes (e-cigs) and increase in the marketing of e-cigs as a clean alternative to traditional smoking as well as a device for smoking cessation, it is likely that the public's perceptions of potential harm and addiction changed over time since their introduction in 2007. Specifically, it is possible that the public's views of the harmfulness and addictiveness of e-cigs have decreased over time and particularly among those with experience as a vaper. To examine this hypothesis, a systematic review of the literature from January 2000 to July 2018 was conducted using both the PsychINFO and PubMed databases. Inclusion criteria included that studies provide data for harm or addiction questions as a percentage or proportion of participants. Three groups of nicotine users were coded including current smokers, dual users, and e-cig users. One group was added for the entire sample including non-nicotine users. Articles that focused primarily on smoking cessation were not included.

Current smokers ($k=5$) reported the highest pooled prevalence of perceived harmfulness of e-cigs with 50% ($z = 20.05$, $p < .0001$, $0.45 - 0.55$). Their average harmfulness perceptions increased over time at a rate of 2.5% per year ($z = 3.85$, $p = 0.0001$). Dual users ($k=3$) reported the lowest harmfulness perceptions of e-cigs with the pooled prevalence in this group 73% ($z = 19.98$, $p < .0001$, $0.66 - 0.80$) and their harm perceptions decreased on average by 3% per year ($z = -5.54$, $p < .0001$, $-0.04 - -0.02$). Similarly, e-cig users ($k=14$) reported lower harmfulness perceptions with pooled prevalence 74% ($z = 22.86$, $p < .0001$, $0.68 - 0.80$). However, these perceptions did not change over time ($Q(df=1)=0.32$, $p=0.57$). Addiction perceptions showed a different pattern with dual users ($k=2$) reporting the highest rate that e-cigs are less addictive than combustible cigarettes with a pooled prevalence of 73% ($z = 19.98$, $p < .0001$, $0.6582 - 0.8013$). E-cig users ($k=7$) reported the second-highest pooled prevalence for addiction perceptions with 46% ($z = 8.75$, $p < .0001$, $0.36 - 0.56$). Current smokers ($k=2$) reported the lowest pooled prevalence of addiction perceptions 32% ($z = 7.61$, $p < .0001$, $0.23 - 0.40$).

We've seen shifts in how nicotine users view e-cigs, of particular concern, is the perceptions of the addictiveness of nicotine. Dual users and their views that these devices are less harmful and less addictive than combustible cigarettes is an important insight into this growing group of nicotine users. The slow decrease in harmfulness perceptions among smokers is also of note as this group may over time transition into dual users. Seeing how different groups of nicotine users view the harmfulness and addictiveness of e-cigs is important to the development of future nicotine cessation programs and health communications.

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A GEO-SPATIAL APPROACH TO EXPLORE THE SOCIO-ECOLOGICAL CONTEXT OF TOBACCO AND VAPE SHOP LOCATIONS

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Introduction: Despite growing public health efforts to discourage teens from using hazardous tobacco products, their use of ENDS (electronic nicotine delivery system) remain piqued due to direct youth targeting by tobacco and vaping companies. ENDS especially e-cigs most often have a fruit or candy flavor that are particularly attractive to young people and may have high nicotine – which is highly addicting.

Methods: 1) analyzed national/local nicotine product use in youth by gender, age, and racial/ethnic groups, 2) explored socio-ecological context of tobacco/vape shops via geo-spatial mapping within Los Angeles Service Planning Area 3 (SPA 3), 3) conducted environmental scan of social media platforms combined with Google and Yellow Pages searches.

Results: Population level results were drawn from US Census, 2013-2017 American Community Survey (ACS) and California Tobacco Facts and Figures, 2019. 13.5% middle schoolers and 37.7% high schoolers reported ever using e-cigarettes. Use of basic or disposable devices was associated with younger age especially among Latinos (5% reported use in the past month compared to < 3% among other ethnicities). To explore socioecological contexts of tobacco and vape shops in SPA 3. Regardless of income, a higher number of tobacco and vape shops appear to correspond with higher percentage ethnic minorities. Lower income cities tended to have more tobacco and vape shops compared to very high income cities. Tobacco products cost less in neighborhoods with a lower median household income and in neighborhoods with a higher proportion of Hispanic residents, even after adjusting for store type. Additionally, prior to the presentation, we will conduct geospatial mapping analysis: We will utilize open GIS software (QGIS) and open web map tools (Leaflet) to geocode locations of smoke/vape shops and overlay them with city demography to illustrate their spatial relationships and proximity to various neighborhoods.

Discussion: Sustained implementation of population-based tobacco, including vaping, prevention and control strategies, in coordination with the Food and Drug Administration, are critical to reducing tobacco use including vaping and initiation among all U.S. population especially ethnic minorities and youths. There are associations of Tobacco Products marketing (price, placement, promotion, or product availability) with a neighborhood demographic (socioeconomic challenged, minority race/ethnicity and high traffic volume). Vape shops are more likely to be concentrated in low resourced communities with less political clout – these areas tend to be minority dense with fewer restrictions. Findings could inform initiatives aimed at a stronger licensing requirement for vape shops and federal and state-level regulations of this industry to prevent tobacco/vape shop from targeting minority and other socially challenged groups.

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MORE THAN THE SUM OF ITS PARTS: A NETWORK PERSPECTIVE ON TOBACCO WITHDRAWAL

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A recently developed network perspective on tobacco withdrawal posits that withdrawal symptoms causally influence one another across time, rather than simply being indicators of a latent syndrome. Evidence supporting a network perspective would shift the focus of tobacco withdrawal research and intervention toward studying and treating individual withdrawal symptoms and inter-symptom associations. Yet, key questions remain to be addressed, including whether withdrawal symptoms and their interactions are moderated by abstinence and by cessation treatment. Here we examine the evidence for a network perspective on tobacco withdrawal. First, we use data from 668 participants (40% female, 78.29% African American) reporting on their experiences of withdrawal after 16 hours of smoking abstinence and during a non-abstinent state to examine the extent to which individual withdrawal symptoms are differentially impacted by smoking deprivation. Second, we estimate the symptom network structure of tobacco withdrawal during states of smoking satiety and abstinence. Third, we use experience-sampling data from 1210 participants (58.35% female, 86.24% white) undergoing smoking cessation treatment to estimate dynamic symptom networks that describe the interplay among withdrawal symptoms across time. Results indicate (i) differential impact of smoking deprivation on individual withdrawal symptoms, suggesting that symptoms are not interchangeable, (ii) substantial interplay among withdrawal symptoms that shows no evidence of change across periods of smoking satiety and abstinence, and (iii) reductions in the interplay among withdrawal symptoms during smoking cessation treatment. Overall, findings suggest the utility of a network perspective and encourage a greater consideration of the individual symptoms of tobacco withdrawal.

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PROMOTING PATIENT-PROVIDER DISCUSSION AND SMOKING ABSTINENCE WITH INTERACTIVE MOBILE DOCTOR: A RANDOMIZED CONTROLLED TRIAL

Janice Y. Tsoh, PhD¹, Thu Quach, PhD², Isabel V. Nguyen, BS³, Khanh Hoa Nguyen, B.A.⁴, Emily Sa Nan Park, BS², Tina Diep, n/a², George Lee, MD², Agnita Pal, MEng², Tung T. Nguyen, MD⁵¹University of California, San Francisco, San Francisco, CA; ²Asian Health Services, Oakland, CA; ³University of California, San Francisco, San Jose, CA; ⁴Asian Health Services, Berkeley, CA; ⁵Department of Medicine, UCSF, San Francisco, CA

Background: Smoking prevalence among Asian American male smokers remain disproportionately high. Despite primary care setting presents an opportune time to engage smokers to promote smoking cessation, nearly half of Asian American smokers reported not receiving advice or assistance from their primary care providers (PCP) to quit smoking. Our team developed a multi-lingual interactive Mobile Doctor (iMD) program to address smoking among Asian American smokers in primary care. iMD delivers the “5 A’s” via interactive videos; it asks about smoking status; advises to quit; assesses readiness to quit; assists concerns about quitting with cessation resources information; and arranges follow-up by generating a bilingual tailored printout to enhance patient-provider discussion on tobacco use.

Objective: This study was designed to evaluate the iMD intervention in promoting patient-provider discussion and quitting smoking with Chinese, Korean, and Vietnamese male smokers. We conducted a randomized controlled trial with 174 daily smokers presented at primary care clinics of a federally qualified health center. Participants were randomly assigned to either the iMD intervention (n=89) or the control group (n=85) receiving a video education on nutrition and physical activity right before seeing their PCP. Primary outcomes were patient-provider discussion documented on electronic health records (EHR) and verified 7-day smoking abstinence (from EHR at a subsequent visit or salivary cotinine) at 6-month follow-up.

Results: The study sample included 174 male daily smokers (mean age = 55.4, range: 21 to 75 years old) with two thirds in precontemplation with no intention to quit smoking within 6 months. Chronic health conditions were common: hyperlipidemia (64%), hypertension (52%), diabetes (25%) and behavioral health diagnosis (32%). A total of 131 participants completed intervention in Cantonese (49%), Vietnamese (36%), Korean (9%) or English (6%). Intervention incompleteness was primarily due to cancellation of the PCP visit. Intent-to-treatment analysis showed, when compared to the control participants, iMD participants had a higher rate of EHR-documented patient-provider discussion on tobacco (Advise, Assess or Assist) when compared to the comparison group (73.0% vs. 50.6%, $p < 0.01$). iMD participants also reported higher satisfaction with the patient-provider discussion on tobacco (93% vs. 73%, $p < 0.01$). At 6-month follow-up, iMD participants were more likely to report achieving 7-day smoking abstinence (Odds Ratio: 4.9; 95% CI: 1.1-22.9).

Conclusion: iMD, a brief, self-administered interactive video education tool can enhance patient-provider communication on tobacco use and facilitate smoking abstinence. Findings supported feasibility and high patient satisfaction in leveraging technology to address tobacco use among Asian immigrant smokers in primary care.

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C375

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PERCEPTIONS OF AMBIGUITY ABOUT CIGARETTES AND E-CIGARETTES AMONG USERS AND NON-USERS

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Introduction: E-cigarettes are increasing in popularity but pose health risks. While studies have examined perceived risk of e-cigarette use, little is known about the extent to which people perceive ambiguity—limitations in the reliability, credibility, or adequacy of scientific information—about the health risks of e-cigarette use. People may perceive ambiguity about harmful products to defensively justify using them. We conducted two studies to test hypotheses that 1) People will have greater perceived ambiguity about e-cigarettes than cigarettes, and 2) People who use cigarettes and e-cigarettes will report greater perceived ambiguity about cigarettes and e-cigarettes than people who do not use those products, respectively.

Method: Study 2 was informed by Study 1 and preregistered on OSF. We recruited college students (Study 1: $n=1,515$, $M_{age}=19.28$, 82.2% female, 79.8% White) and MTurkers (Study 2: $n=483$, $M_{age}=44.23$, 54.8% male, 79.6% White) to complete a cross-sectional survey about their tobacco use and perceived ambiguity. Perceived ambiguity about cigarettes and e-cigarettes was the average of 4 items for each scale (e.g., “There are conflicting expert opinions about whether [smoking cigarettes/using electronic cigarettes] is harmful,” 1=strongly agree, 4=strongly disagree). Items were reverse scored so higher scores indicated higher perceived ambiguity.

Results: The new scales assessing ambiguity about cigarettes and e-cigarettes were reliable in both studies (all $\alpha s > .77$). We conducted repeated measures ANOVAs with ambiguity type (cigarettes vs. e-cigarettes) and four user groups (cigarette, e-cigarette, dual cigarette and e-cigarette, and non-users). Consistent with Hypothesis 1, ambiguity was greater about e-cigarettes (Study 1: $M=2.25$, $SD=.72$; Study 2: $M=2.64$, $SD=.72$) than cigarettes (Study 1: $M=1.55$, $SD=.65$; Study 2: $M=1.66$, $SD=.76$; main effect of ambiguity type: Study 1: $F(1,1510)=295.3$, $p < .001$, Study 2: $F(1,479)=515.4$, $p < .001$). There was a significant interaction only in Study 1 ($F(3,1510)=8.5$, $p < .001$). In partial support of Hypothesis 2, cigarette users ($M=1.81$, $SE=.08$) perceived greater ambiguity about cigarettes than dual users ($M=1.45$, $SE=.13$, $p=.017$) and non-users ($M=1.49$, $SE=.02$, $p < .001$), but not e-cigarette users ($M=1.65$, $SE=.03$, $p=.068$). E-cigarette users ($M=2.49$, $SE=.03$) perceived greater ambiguity about e-cigarettes than non-users ($M=2.14$, $SE=.02$, $p < .001$), but not cigarette users ($M=2.39$, $SE=.09$, $p=.273$) or dual users ($M=2.46$, $SE=.14$, $p=.818$).

Conclusions: People perceived greater ambiguity about e-cigarettes than cigarettes, and some evidence suggested that those who use particular products endorse greater ambiguity about these products. Future research might examine causal links among perceived ambiguity and tobacco use and test health communication strategies to reduce perceived ambiguity about e-cigarettes.

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C376

6:15 PM-7:30 PM

LOCAL LICENSING TO REGULATE TOBACCO RETAILERS IN CALIFORNIA: A STUDY OF POLICY DIFFUSION OVER TIME AND GEOGRAPHY

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Significance: Local level policy interventions in the retail environment (e.g., flavor bans, location-based restrictions) are increasing rapidly. We examined diffusion of tobacco retailer licensing (TRL) policy in California's cities and counties from the first local license (1992) to 2019.

Methods: In MonQcle, a cloud-based legal coding platform, the municipal TRL ordinances were coded at the date they first became effective and the most recent version to capture change in policy over time; 20% of all coding instances were double coded. A total TRL score (range 0-35.5) and flavor restriction subscore (0-5) were derived. We linked the TRL coding with jurisdiction-level demographic data derived from the American Community Survey (2012-2016) and 2014 jurisdiction-level adult cigarette smoking prevalence from CHIS. Total TRL and flavor scores were modeled via spatial regression implemented in the R package ‘nlme’ separately at origin, current, and change over time (current minus origin). All models adjusted for spatial autocorrelation.

Results: Prior to California's state TRL taking effect in 2004, 28 cities and 2 unincorporated counties enacted local TRL. By 2019, 167 of California's 539 jurisdictions (31%) required a local TRL (153 cities/16 unincorporated counties). In 2019, jurisdictions with TRL ($n=167$) vs without ($n=372$) tended to be urban (94% vs. 70%), with greater mean population size (122K vs. 48K), greater median household income (\$68K vs. \$66K), a lower percent of non-Hispanic White residents (42.5% vs. 50.5%); and a lower smoking prevalence (12% vs 13%), all p -values $< .02$. Of the 167 jurisdictions with TRL, 85 (51%) updated them over time. TRL origin and current scores strengthened with time ($p < .001$). TRL total and flavor scores were higher for the San Francisco Bay Area and Los Angeles relative to other areas, and the Bay Area had the greatest score increases over time.

Conclusion: The findings support a pattern of diffusion in TRL policies in California's cities and counties. Over time and in focal geographies, TRL scores strengthened. The Bay Area, in particular, has been a leading region for TRL policies and specifically for flavor bans.

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LEVERAGING GENETIC DATA TO IDENTIFY NOVEL TARGETS AND DRUGS FOR TREATING TOBACCO USE DISORDER AND SMOKING-RELATED LUNG DISEASES

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Novel treatments for smoking cessation and sequelae (e.g., cardiovascular, respiratory, and oncologic diseases) are greatly needed. Targeting disease mechanisms with genetic support can increase success in drug development. However, translating genome-wide association studies (GWASs) of complex diseases to target discovery and medication development remains challenging. Cigarette smoking is exemplary of this challenge; large GWASs have yielded many significant SNPs, yet limited drug targets for treating smoking and smoking-related consequences have been identified. To address this gap, we conducted a two-step analysis. First, we applied a modified version of the Integrative Risk Gene Selector (iRIGS) to 55 genome-wide significant SNPs from the largest GWAS of cigarettes per day to date ($N = 337,334$). In this study, iRIGS ranked candidate genes at each SNP by integrating evidence based on genomic features (i.e., distance from gene to SNP and regulatory information) and closeness of these genes in network space, yielding 55 high-confidence risk genes (HRGs) for cigarettes per day. Second, we used the Target Central Resource Database (TCRD; a comprehensive database including investigational molecules and FDA approved drugs) to search for drug-protein interactions for these HRGs and previously identified risk genes for cigarettes per day to identify potential drugs for repurposing. In the first set of analyses, we identified several HRGs for cigarettes per day that are novel contributions to the genes from the previously published GWAS. Namely, *ETS2* (ETS proto-oncogene 2, transcription factor) has been associated with pathogenesis of pulmonary fibrosis and with response to chemotherapy treatment for lung cancer. Additionally, *EPHA5* (EPH receptor A5) and *ACVR2A* (activin receptor type-2A) mRNA levels have been linked to reward function and are modulated by cocaine administration in rodents. With regard to the second set of analyses exploring drug-protein interactions, we found some expected targets (e.g., varenicline linked to nicotinic receptors). Additionally, we identified gabapentin and pregabalin, which both target *CACNA2D2* (calcium voltage-gated channel auxiliary subunit alpha2/delta2) and have been investigated to varying degrees for treating alcohol and substance use disorders. Finally, we identified several drugs (and associated targets) that show promise for managing sequelae of smoking such as lung cancer, COPD, and tobacco smoke-induced cerebrovascular toxicity. This study demonstrates the value of incorporating regulatory information and drug-protein interaction data to highlight promising molecular targets and drugs for treating tobacco use disorder and pulmonary sequelae.

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C378

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PERCEPTIONS OF SOCIAL SUPPORT IN A SMALL SAMPLE OF WOMEN WHO PARTICIPATED IN AN ONLINE YOGA INTERVENTION AFTER STILLBIRTH

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Introduction: Stillbirth is a traumatic experience for mothers that can have numerous mental health effects. Social support is important to improving mental health outcomes for women who have experienced stillbirth. Many women use online resources (e.g., discussion groups) for support. The purpose of this study was to explore the role of social support in mothers who have experienced stillbirth after participating in an online yoga intervention. Data from this study will inform a future efficacy trial using the multiphase optimization strategy (MOST) design.

Methods: This was a qualitative study. Participants ($n=10$) were recruited via email from a sub-sample of stillbirth moms ($N=46$) who participated in an online yoga feasibility study. Due to scheduling difficulties, the research team conducted two small focus groups ($n=2$; $n=4$) and four individual interviews. Participants were asked about their experience with social support (e.g., what role it has played in their grief process) and social support as it relates to the study (e.g., how their experiences would have been different if there was a social support component with the online yoga). Data were recorded and transcribed verbatim and analyzed using NVivo. Both deductive and inductive coding was used to organize the data, generate categories, and develop themes and sub-themes.

Results: Findings from this study highlights social support from friends and family that is emotional (i.e., empathy, concern) and instrumental (i.e., advice, guidance). Roughly a third of participants were satisfied, a third were partly satisfied, and 1/3 were dissatisfied with the support in the intervention. Those who were not satisfied wanted more practical guidance on the videos and reported feeling isolated. Participants felt that with social support would come accountability and motivation to participate. Participants identified five categories that they felt should be part of a social support component of an intervention. This included; (1) appropriate platform (e.g., Facebook), (2) preference specific content, (3) preference specific topics, (4) group facilitation, and (5) set expectation/guidelines of fellow group members.

Discussion: Social support is an essential component of coping with stillbirth, and researchers and practitioners should consider integrating it into interventions for this population. Results of this study may inform components or combination of components of social support for future interventions.

Objectives:

1. Understand the role that social support has in coping with the death of a child.
2. Identify the categories of a social support intervention that women who have had a stillbirth desire.

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EVALUATING THE “BABY BUNDLE” RESOURCE PROGRAM: NEW PARENT NEEDS IN A LOW-INCOME URBAN COMMUNITY

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Evaluating the need and type of resources necessary for mothers and fathers of newborns in low-income areas is a crucial component of effective intervention development. The Bonding Underscores Infant Learning and Development (BUILD) program recruited participants from local WIC centers in a large, Midwestern urban city in order to understand the utility of the resources provided. Each participant received a Baby Bundle Bag that included items such as diapers, wipes, changing pad, bib, a pregnancy/newborn informational book, and breastfeeding information with storage bags. A semi-structured interview evaluated the usefulness of the resources provided and explored nutrition and physical activity (PA) opportunities and other health issues in parents' daily life. Twenty BUILD participants (15 mothers, 5 fathers) agreed to be interviewed about their experience in BUILD. Participants were primarily African American (80%). Mothers' ages ranged from 24–41 years ($M = 29.93$, $SD = 5.42$) and fathers' ages from 26–55 ($M = 35.20$, $SD = 12.22$). Prevalent themes from the interviews included fathers' expression of interest in being involved with their child formally through program resources and enjoying on-the-go bags. Parents found most items to be useful, but mothers reported referring to the resource book less than using the diapers, wipes, and other baby care items. Fathers desired more literature on breastfeeding and ways to be of assistance to the mother. Both moms and dads reported regularly consuming sugar sweetened beverages, and about half of moms do not consume the USDA's Recommended Daily Intake (RDI) for fruit and 73.4% do not meet the RDI for vegetables. Though only one participant reported PA limitations ordered by their physician, most mothers do not meet PA recommendations, which may be difficult postpartum. Over half (53.3%) did not report being physically active at all (0 days PA/week), while 33.3% are active more than 30 minutes on a typical day, mostly attributed to being on their feet at work. Future research should include more input from fathers of newborns, who enthusiastically provided feedback on every aspect of the program and expressed desire to further participate. An increase in access to nutrition and physical activity resources for mothers arose in discussion, but use of books for information should be limited, as parents reported the medium as less useful than web-based or group sessions, or items they could use right away.

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MENTAL HEALTH AND POLYCYSTIC OVARY SYNDROME (PCOS): EXAMINING INFORMATION SHARED TO WOMEN OF COLOR BY HEALTH CARE PROVIDERS

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Background: Polycystic ovary syndrome (PCOS) is a metabolic-endocrine disorder present in at least 6% to 10% of reproductive-aged women. Typically characterized by menstrual dysfunction, hyperandrogenism, and/or polycystic morphology, co-morbidity with mental health disorders is often observed. While previous literature has established the association between PCOS and psychological distress, it is less understood if women of color are given information on PCOS, mental health, or both by health care providers.

Methods: Sixty-five providers from twenty-seven clinics in Huntington Park, CA were contacted for recruitment. Four providers consented and participated in semi-structured interviews.

Results: All four reported menstrual dysfunction as the most common reason PCOS patients seek care, and obesity as the most common feature in patients presenting with PCOS symptoms. Only one provided patients with visual educational material on PCOS upon diagnosis. All four providers reported utilizing validated screening tools to assess patient psychological health on a routine basis, regardless of PCOS diagnosis. Three referred patients for psychological counseling; however, two reported noncompliance as an issue when referring patients to mental health services. While all four providers were aware of the connection between PCOS and psychological health, none communicate this connection to PCOS patients.

Discussion: Sharing PCOS information is often limited to patients with symptomology, and psychological screenings to annual physicals. Psychological distress as a side-effect of PCOS is not elaborated on during patient-provider interactions within the explored service area, indicating a need for better provider communication to female minority patients with PCOS about the psychological implications of the disorder.

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C381

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RELATIONSHIPS OF PERCEIVED MEDICAL STRESS WITH POSTPARTUM TRAUMATIC STRESS AND DEPRESSIVE SYMPTOMS IN NICU MOTHERS

Nichelle Huber, MA¹, Meghan Sharp, PhD², Christyn Dolbier, Ph.D.¹¹East Carolina University, Greenville, NC; ²Women's Medicine Collaborative, Lifespan, Providence, RI

Introduction: Perceived stress is associated with more severe psychopathology after adverse life stressors. Mothers of infants admitted to the neonatal intensive care unit (NICU) experience unique stressors related to their baby's medical care that complicate postpartum psychological adjustment. Little research has investigated relationships between perceived medical stress and postpartum mental health in this special population, and results thus far have been mixed.

Method: Women who had given birth in the prior 4 months ($N = 184$) were recruited via social media advertisements for an online survey about perinatal experiences. The majority were White (89%), married (77%), and primiparous (64%) with Mage = 29.14. Participants completed measures assessing lifetime trauma, traumatic childbirth, symptoms of posttraumatic stress disorder (PTSD) related to childbirth and postpartum depression. Of these, 37% ($n = 63$) had a baby admitted to the NICU. NICU mothers completed a measure of perceived stress related to their baby's hospital stay in three areas: sights and sounds of the unit (SS), baby's appearance and behavior (BAB), and parental role alterations (PRA).

Results: Compared to non-NICU mothers, NICU mothers were significantly more likely to report a traumatic childbirth [67% vs. 27%, $\chi^2(1) = 26.2, p < .001$] and scored significantly higher on measures of PTSD symptoms [$t(162) = 5.10, p < .001$] and postpartum depression [$t(163) = 2.09, p = .038$]. Within the NICU mother subsample, all three NICU stress subscales significantly correlated with PTSD symptoms and the BAB subscale significantly correlated with depression. These relationships persisted in linear regressions controlling for trauma history and length of NICU stay; PTSD: SS ($B = 1.58, t = 3.22, p = .002$), BAB ($B = .79, t = 5.86, p < .001$), PRA ($B = .67, t = 2.56, p = .013$); Depression: SS ($B = .221, t = 1.14, p = .259$), BAB ($B = .18, t = 2.90, p = .005$), PRA ($B = .10, t = .925, p = .359$).

Conclusion: NICU mothers reported greater postpartum psychopathology. Experiencing greater perceived medical stress specifically related to the NICU was associated more strongly with PTSD symptoms than depression. Postpartum depression was only significantly related to stress associated with the baby's appearance and behavior. Results provide support for the inclusion of psychological services in standard NICU care. Providing resources for NICU parents aimed at decreasing NICU stress may be an important intervention target.

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Saturday
April 4th, 2020
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Symposium 69

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OPTIMIZING BENEFITS OF LEARNING ABOUT OTHERS' CANCER EXPERIENCES: DELIVERING EXPERIENTIAL CANCER INFORMATION TO PATIENTS

Christine M. Rini, PhD¹, Kristi Graves, PhD², Shannon Nugent, PhD³, Steve Buechler, PhD⁴¹Northwestern University Feinberg School of Medicine, Chicago, IL; ²Georgetown University, Washington, DC; ³VA Portland Health Care System, Center to Improve Veteran Involvement in Care, Portland, OR; ⁴Minnesota State University, Mankato, Mankato, MN

People with cancer often actively seek information from other patients about their day-to-day experiences with cancer treatment and recovery, hoping to feel more prepared for their own treatment and recovery. "Experiential information" from other patients (peers) is valued because it provides information not available from healthcare providers. Theory and research suggest it can reduce patients' sense of isolation, teach them new ways to cope with and understand their situation, and guide information gathering and decision making. Experiential information available in written form, such as on the Internet, expands access to this potentially valuable resource. However, in addition to its potential benefits, evidence shows that experiential information can be upsetting or provide advice patients view as harmful or inaccurate. It is worthwhile to consider methods for optimizing the benefits of experiential information while minimizing potential harms. This symposium will discuss these issues to consider new ways of providing experiential information as a supportive resource for patients. The first speaker will present a study that investigated cancer patients' real-time reports of their desire for different types of experiential information before and during their stem cell transplant. Collecting data from patients as they move through treatment avoids retrospective recall biases to provide a realistic view of the types of experiential information patients would want, or want to avoid, at different stages of treatment and recovery. The second speaker is part of a team that has developed an online resource through which people can get experiential information on over 120 health conditions. She will present preliminary findings from two new modules—one for Gulf War Era Veterans coping with multisymptom illness and another presenting experiences of childhood cancer and its impact on families. She will highlight the purposes these modules can serve for people coping with similar illnesses as well as other audiences. The third speaker is a sociologist who had a stem cell transplant after being diagnosed with hematologic cancer. He has shared his experience in a book and brings both his sociological and personal perspectives to the challenge of providing experiential information to patients in a way that enhances its potential benefits. The discussant will use insights from each of the presentations to discuss possible new directions for research and interventions.

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8:00 AM-9:15 AM

“KNOWING THE UNKNOWN:” INTEREST IN OTHER PATIENTS’ WRITTEN NARRATIVES ABOUT STEM CELL TRANSPLANT

Kristi Graves, PhD¹, Lauren A. Whitmore, MA², Taylor Schulte, n/a³, Amanda Belanger, B.S.², Lily McFarland, BS⁴, Scott Rowley, MD⁵, Michele Donato, MD⁵, Pashna Munshi, MD⁶, Christine M. Rini, PhD⁷

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Background: Patients with cancer indicate that receiving information about how other patients have managed their illness and treatment is useful. Documented benefits of receiving information from peers with similar diagnoses and treatments include a reduced sense of isolation and feeling more prepared for treatment. Written narratives provide an accessible way to offer information and support from peers. We sought to evaluate interest in the timing and content of reading peer narratives among patients diagnosed with hematological cancer who were about to undergo stem cell transplant.

Methods: The present study was conducted within the context of a randomized clinical trial evaluating expressive helping narratives compared to neutral writing among patients undergoing stem cell transplant. We collected data about patient demographics and interest in peer narratives (stories) at pre-transplant baseline and post-transplant around the time of nadir, engraftment and an immediate post-intervention follow-up assessment.

Results: Among 69 patients at baseline, 46% were women, 55% were having autologous transplants and 44% were over age 60 years old. More than half of patients (53%) were moderately to extremely interested in seeing other patient stories, and 41% reported high levels of interest in seeing these stories before transplant. Most patients indicated it would be useful to read about what to expect physically (78.6%) and emotionally (64.3%) during transplant. Patients were particularly interested in stories with practical information to meet their own or their family’s needs. Interest in reading stories by other patients remained relatively consistent over time, with about half of patients moderately to extremely interested at: nadir (50%), engraftment (47%) and follow-up (54%). Although general interest in stories was not associated with patient age, gender or transplant type, female patients were more likely than male patients to report stories could help them feel better ($t=3.09$, $p < .05$).

Conclusions: Patients’ interest in reading stories written by patients who have had a stem cell transplant is consistent over the course of time from pre- to post-transplant. Narratives with practical information including what to expect physically and emotionally may be most helpful to patients prior to a stem cell transplant. Results highlight opportunities to explore intervention approaches that deliver patient narratives.

2

8:00 AM-9:15 AM

USING HEALTH EXPERIENCES RESEARCH TO ENHANCE PATIENT, CAREGIVER, AND PUBLIC’S UNDERSTANDING OF THOSE LIVING WITH CHRONIC ILLNESS

Shannon Nugent, PhD¹, Sara Knight, PhD², Erika Cottrell, PhD³, Mark Helfand, MD, MS, MPH⁴

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Developed in 2001 by the Oxford University Health Experience Research Group, the Database of Individual Patient Experiences (DIPEX) approach utilizes rigorous qualitative research methods to collect and analyze in-depth interviews about patient experiences with particular health conditions. DIPEX methodology uniquely emphasizes dissemination whereby researchers produce publicly available web modules that include lay language summaries describing the range of patient experiences in a balanced and accessible format. In addition, interview transcripts are stored in a data warehouse and available for secondary analysis. In the UK, there have been modules produced on over 120 health conditions and topics, which can all be found on healthtalkonline.org. In the US, there have been two models produced, which can be found on healthexperienceusa.org; several additional US modules on a range of topics are underway.

In this symposium, we will present preliminary findings and examples from two of the US modules currently underway: (1) Listening to Gulf War Era Veterans: A Qualitative Inquiry into the Symptoms and Treatment of Those with Chronic Multisymptom Illness and (2) Understanding the Experience of Childhood Cancer and the Impact on Families. We will share video and audio clips that are illustrative of several themes that we have identified including: Process of receiving a diagnosis, experiences with treatment, and coping. We will discuss opportunities in which the information we are gathering can serve many purposes including: motivating system change; informing research, clinical practice, and policy; and providing an ongoing resource for patients, caregivers, researchers, clinicians, and healthcare system leaders, especially with regard to cancer care.

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8:00 AM-9:15 AM

EXPERIENTIAL CANCER STORIES: NOTES ON WHAT PATIENTS NEED TO HEAR FROM SOMEONE WHO’S “BEEN THERE AND DONE THAT.”

Steve Buechler, PhD¹

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Cancer patients are often inundated with technical information about their diagnosis but lack personal accounts of how to deal with their disease. As a leukemia patient, transplant recipient, cancer survivor, memoir writer, peer patient visitor, and support group participant, I have heard many cancer stories over the last three years. This paper draws on my cancer odyssey and sociological perspective to cull some recommendations about what types of stories and information are likely to be more or less helpful to current patients.

I will summarize my own experience during prolonged treatment for acute myeloid leukemia when I devised a number of coping strategies that sustained me. I will discuss how writing my story for others helped me make sense out of that experience as I composed three distinct types of sociological stories. I will use my role as a peer patient volunteer and support group participant to enrich our understanding of what kinds of information are desired (and not desired) by patients and how hearing the stories of others helped me understand my own. And finally, I will incorporate preliminary insights from my participation as a community board member with the WISE project which is seeking to deliver helpful stories to cancer patients through a web-based platform.

Symposium 70

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8:00 AM-9:15 AM

THE ROLE OF SOCIAL ENVIRONMENTAL FACTORS IN COMMUNITY AND EHEALTH INTERVENTIONS

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Estimates of the proportional contribution of clinical, social, environmental, genetic and behavioral domains of health status and premature death suggest that 60% of the variance in health outcomes is attributed to social, environmental and behavioral factors, while only 10% of the variance is linked to delivery of health-care (Schroeder, 2007). This distribution presents a tremendous opportunity for the field of behavioral medicine and health psychology to better understand and influence the range of health-promoting interventions delivered in the context of community and eHealth contexts. By shaping norms, enforcing patterns of social control, and providing social support and opportunities to engage in particular health behaviors, the social environment plays a central role in influencing health behaviors. In addition there is strong correlational evidence supporting the importance of social environmental factors ranging from interpersonal relationships (e.g., social support) to neighborhood factors (e.g. social cohesion, neighborhood safety). However, social environmental factors have proven to be difficult to manipulate experimentally, thus limiting conclusions about causality. This symposium proposes that more rigorous methodologies are needed to provide a stronger evidence base for the role of social environmental factors in relation to health behavior change interventions. This symposium showcases novel approaches to experimentally changing and assessing social and environmental factors through interventions programs that promote resilience and positive health outcomes across different contexts, including afterschool programs, app-based eHealth programs, and community-based programs. Three presentations will be given, by Drs. Nicole Zarrett, Ken Resnicow, and Allison Sweeney, based on their recent trials. Following these presentations our discussant, Dr. Chris Dunkel Schetter, will provide a critique and integrate her perspectives on social environmental factors in understanding resilience and health outcomes.

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CONNECT THROUGH PLAY: A PHYSICAL ACTIVITY INTERVENTION FOR ADOLESCENTS THAT TARGETS SOCIAL MECHANISMS IN AFTERSCHOOL PROGRAMS

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The “Connect through PLAY feasibility trial, based on social development theory and the social mechanisms highlighted by Self-Determination Theory and Achievement Goal Theory, aimed to increase the physical activity (PA) of underserved (i.e., low income, minority status) middle school youth within pre-existing afterschool programs (ASPs). The intervention targeted several critical social mechanisms within ASPs overlooked in previous interventions with the goal of developing friendship and connection to peers and staff and group belonging through PA, and positive PA peer norms and tangible support. The current paper reports findings from the recently completed feasibility trial (NIH R21 HD077357) within 6 ASPs (3 intervention vs. 3 controls) for underserved middle school youth (N=224; 56% female; 73% African-American; ASPs free/reduced lunch rates = 57-98%) that was the first intervention to date to address youth PA social mechanisms. A regression model (pooled across imputations), controlling for baseline MVPA, site, bmi, and gender significantly predicted accelerometry-measured MVPA ($F[5,219]=46.17$, $p < 0.001$, $R^2 = 0.51$), with youth in the social intervention (vs. comparison) showing an increase of 8.61 min of MVPA at post ($B=8.61$, $SE: 3.63$, $p < 0.001$). Systematic observations of ASPs using SOCARP (Ridgers et al., 2010) and the MCOT supplement (Zarrett et al., 2013; 2015) also showed positive effects for changing targeted social mechanisms including staff behaviors (e.g., prompting PA [$t(118)=2.60$, $p=.01$], praising [$t(118)=1.98$, $p=.05$], participating with youth [$t(118)=5.93$, $p=.000$]), youth behaviors (e.g., positive interactions with peers [$t(118)=3.68$, $p=.000$]), and quality of the activities (e.g., inclusiveness [$t(118)=5.04$, $p=.000$]; structured autonomy [$t(118)=7.86$, $p=.000$]). Staff readiness assessments of general and intervention-specific capacity and staff motivation indicate critical changes in staff perceptions and motivations from pre- to post-intervention as well as challenges that still need to be addressed to improve adoptability and sustainability. Findings will be discussed in terms of how they were used to inform the current R01 Efficacy trial, which expands on the intervention’s novel translational approach by targeting program staff as instrumental for sustainable changes in social mechanisms within the ASP setting for increasing the daily PA of underserved adolescents.

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8:00 AM-9:15 AM

THE ROLE OF DYADIC SUPPORT AND GEOGRAPHICAL POSITIONING SYSTEMS IN EHEALTH INTERVENTIONS

Kenneth Resnicow, PhD¹, Cristian Meghea, PhD², Patrick Carter, MD³, Susan Woolford, MD³, Jon Moon, PhD⁴¹University of Michigan, Ann Arbor, MI; ²Michigan State University; ³University of Michigan School of Medicine; ⁴MEI Research, Edina, MN

Typically, support for and contextualization of behavior change efforts are provided interpersonally. However, increasingly, with the advent of technology, support and contextualization can be provided digitally. This presentation will describe novel ways our group and others are using technology (e.g., Apps and other devices) to support behavior change efforts. We will focus on two innovations; 1) GPS Aided Just-in-Time (JIT) in-vivo messaging, and 2) Digital application of dyadic support. GPS-aided JIT messaging utilizes geolocation or geofencing to prompt messages in real time, in the context of occurring or soon to occur behaviors. We will describe two Apps, both under development and/or initial testing, one that messages youth at risk for violence and substance use based on their current geolocation (e.g., a bar or park where they have had a violent incident or have used drugs) and the second, using geolocation of the participant and known fast food restaurants to message overweight adolescents about their food intake, ideally prior to ordering. Dyadic support will be addressed both through a smoking cessation App targeting both pregnant smokers and their spouses and the previously mentioned fast food geolocation App. The smoking cessation App has both a smoker and spouse version. The spouse version provides information and communication skills to support the pregnant smoker. The fast food App has both a teen and parent version, and again, the parent version provides communication tips for the parent to encourage healthy food choices of their teen in real time, in vivo. We will also address how to apply these approaches to other health behaviors and contexts and make recommendations for future research.

3

8:00 AM-9:15 AM

EVALUATING DIFFERENT APPROACHES FOR BUILDING SOCIAL SUPPORT FOR PHYSICAL ACTIVITY AMONG AFRICAN AMERICAN WOMEN IN THE DRIVE TRIAL

Allison Sweeney, PhD¹, Dawn K. Wilson, PhD¹¹University of South Carolina, Columbia, SC

Social support is well-documented as a robust correlate of physical activity (PA). By providing opportunities to share strategies and build relationships with others working towards similar goals, group-based interventions have high potential for enhancing social support for PA. This may be particularly important for African American (AA) women, for whom lack of social support is one of the most frequently cited interpersonal barriers to PA. The type of support needed can vary across individuals and the best practices for building support within group-based interventions remain unclear. Drawing from a focus group study, which found that differences in autonomous motivation were associated with distinct social support needs among AA women, the present research evaluates two approaches to building social support in group-based interventions. These approaches were evaluated in the Developing Real Incentives and Volition for Exercise (DRIVE) program, a randomized pilot study comparing two group-based interventions for AA women: 1) a Challenge program, targeted towards high autonomous motivation (viewing PA as self-determined), focuses on building enjoyment and valuation of PA, and emotional social support through a team-based positive social climate; and 2) a Rewards program targeted towards low autonomous motivation (viewing PA as a means to an end), which focuses on building interest in and competency for PA, and instrumental social support through partner-based strategies. More participants in the Rewards program reported meeting up outside of the program to be active with another DRIVE member (71%) vs. the Challenge program (35%). Alternatively, more participants in the Challenge program reported communicating with their DRIVE group at least 2 days per week (65%) vs. the Rewards program (23%). These findings demonstrate that the intervention programs were successful in reinforcing different types of support (being active together vs. communication). Importantly, both programs showed a positive increase in social support for PA from baseline to post-program and this change was positively associated with average minutes of weekly PA across 8 weeks ($r_s = .27-.32$). The speaker will use these results to guide a discussion on the value of developing and carefully evaluating different approaches to creating social support for PA, and the implications this has for improving the delivery of group-based interventions for underserved communities.

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SOCIAL AND STRUCTURAL DETERMINANTS OF ALCOHOL AND DRUG USE AMONG RACIALLY AND ETHNICALLY DIVERSE SEXUAL AND GENDER MINORITIES

Eric K. Layland, MS¹, Roberto Renteria, MA², Cindy B. Veldhuis, PhD³, Allen J. LeBlanc, PhD⁴¹Pennsylvania State University, University Park, PA; ²Arizona State University, Tempe, AZ; ³Columbia University, New York, NY; ⁴San Francisco State University, San Francisco, CA

Alcohol and other drug use disparities among sexual and gender minorities (SGM) are attributable, in part, to diverse forms of social and structural stigma and stress. SGM are a heterogeneous population; using an intersectional perspective to consider the health impact of unique stressors allows researchers to identify unique mechanisms underlying disparities and identify potential points of intervention.

SGM of diverse racial and ethnic backgrounds may face additional stress related to their race/ethnicity and unique stigma related to the specific intersection of their race/ethnicity and SGM statuses. The research presented in this symposium examines within-group differences in racially and ethnically diverse SGM samples to understand the connections among social and structural stressors and alcohol and drug use.

In the first presentation, the interaction of both social and structural factors contributed to alcohol and drug use behavior among Latino men who have sex with men (LMSM). For LMSM, barriers to health care and a lack of community collective efficacy appear to negate the protective effects of social support. Results from this study highlight the need to consider the structural and social contexts and barriers to health uniquely experienced by LMSM when identifying protective factors and opportunity for intervention.

Second, among women in same-sex/gender relationships, individual- and couple-level stressors may discretely heighten risks for heavy drinking. Results illustrate an association between relational stress and heavy drinking across all couples. However, for women in interracial/interethnic relationships, couple-level rejection and lack of support were associated with heavier drinking. This intersectional approach to minority stress illuminates heterogeneity in the links between stress and drinking. It also uncovers possible points of intervention for women in same-sex/gender couple relationships generally, with specific implications for interracial/interethnic couples.

Finally, for Black and Latino young sexual minority men (BL-YSMM), intersecting experiences of stress, racism, and homonegativity are associated with more severe drug use. Results demonstrate the universal association of stressful events with drug use across racial/ethnic groups. Experiences of and response to discrimination differed by race/ethnicity, and drug use was linked to certain types of discrimination only among B-YSMM. This study suggests a universal intervention target (stressful events) and opportunity for tailored intervention addressing discrimination on among BL-YSMM.

Together these results point to the need for research that recognizes diversity and heterogeneity among SGM and alcohol and drug interventions that are tailored to the needs and experiences of individuals at the intersections of race/ethnicity and sexual and gender identities.

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EXPERIENCES AND HEALTH CORRELATES OF DISCRIMINATION ARE NOT UNIVERSAL: STRESS, RACISM, AND HOMONEGATIVITY AS DETERMINANTS OF DRUG USE AMONG DIVERSE SEXUAL MINORITY MEN

Eric K. Layland, MS¹, Bethany Bray, PhD², Michele Kipke, PhD³¹Pennsylvania State University, University Park, PA; ²University of Illinois at Chicago; ³Children's Hospital Los Angeles

Background: For Black and Latino sexual minority young men (BL-YSMM), drug use disparities become especially apparent when minority stress (e.g., stressful life events, racism, homonegativity) is considered. BL-YSMM may experience intersectional discrimination targeting the intersection of their race/ethnicity and sexual identities, however, it remains unclear which minority stressors contribute to drug use specifically and whether these pathways are variant across racial/ethnic groups. Therefore, we investigated associations of stressful events and discrimination with drug use and moderation by race/ethnicity.

Methods: The sample ($n=448$) included Latino (58.9%), Black (21.0%), and Black/Latino (20.1%) YSMM aged 16 to 24. Participants reported number of stressful life events (e.g., family conflict, HIV diagnosis) in the last six months and frequency of discrimination (i.e., sexual and institutional racism, harassment and shaming homonegativity). Race/ethnicity was coded to compare Black and Black/Latino to Latino participants. Modified Poisson regression with robust error variance was used to estimate prevalence rates of past six-month and lifetime use of tobacco, cocaine, poppers, and other drugs.

Results: Stressful life events were associated with prevalence of past six-month use of all drugs (prevalence ratio [PR]: 1.16-1.33). Sexual racism was associated with greater prevalence of six-month poppers use for Black YSMM (PR: 1.92) and lifetime other drug use for Black and Black/Latino YSMM (PR: 1.50-2.35) relative to Latino YSMM. Institutional racism was associated with higher prevalence of lifetime cocaine, poppers, and other drugs use for Latino YSMM only (PR: 1.42-1.57). Shaming homophobia was associated with greater prevalence of six-month and lifetime tobacco use for Black and Black/Latino YSMM (PR: 1.24-2.19) relative to Latino YSMM. Harassment homonegativity was not associated with drug use.

Discussion: Results demonstrate similarities and differences across race/ethnic groups in drug use etiology among BL-YSMM. Stressful life events were associated with greater prevalence of all past six-month drug use across race/ethnic groups. The effects of discrimination varied by race/ethnic group and drug. Thus, unpacking the connection between stigma-related minority stress and drug use requires investigation of differences within populations experiencing health disparities (i.e., YSMM). For example, compared to Latino YSMM, Black YSMM reported lower prevalence of poppers use, yet when they experienced sexual racism, their poppers use exceeded that of Latino YSMM. Researchers must account for subgroup differences when attempting to understand how different types of minority-stressors together contribute to drug use outcomes. Future research should address how BL-YSMM may be differentially targeted by and respond to racism and homonegativity.

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8:00 AM-9:15 AM

SOCIAL DETERMINANTS OF SUBSTANCE USE AMONG LATINO MEN WHO HAVE SEX WITH MEN

Roberto Renteria, MA¹, Sean Spille, MEd², Carolina Lara-Lerma, MA², Frank Dillon, PhD², Austin Eklund, EdM, MS³, Ryan Ebersole, MS³¹Arizona State University, Tempe, AZ; ²Arizona State University; ³University at Albany, State University of New York

Background: Latino men who have sex with men (LMSM) are at higher risk for HIV infection, a risk that is exacerbated by problematic substance use. Little research has focused on structural predictors of substance use. LMSM who report more social support use substances less; yet, it is unclear how this relationship may vary across levels of healthcare access and community collective efficacy. This study investigates whether the link between social support and substance use changes across structural variables (i.e. access to healthcare and collective efficacy). First, we tested the association of perceived social support and substance use, and then tested access to healthcare and collective efficacy as moderators.

Methods: Participants were Latino men who endorsed having sex with men in the previous 12 months (N=493). Predictors included access to healthcare, collective efficacy, and perceived social support. Outcomes included the Alcohol Use Disorders Identification Test and the Drug Use Frequency measure. A hierarchical regression analysis examined the association between perceived social support and problematic substance use. Interaction terms were created to test access to healthcare and collective efficacy as moderators in predicting substance use. All analyses adjusted for income, age, marital status, and race.

Results: Findings supported that higher perceived social support was associated with lower problematic alcohol use ($\beta=-0.4$) and lower frequency illicit drug use ($\beta=-0.3$). Both access to healthcare ($\beta=0.2$) and collective efficacy ($\beta=0.3$) were positively related to problematic alcohol use. Only access to healthcare ($\beta=0.3$) predicted more frequent illicit drug use. Both access to healthcare and collective efficacy moderated the relationship between social support and each substance use outcome such that this association was stronger among those who reported higher levels of access to healthcare and higher levels of collective efficacy.

Conclusions: Social support has been suggested to be a negative predictor of substance use; however, these results demonstrate that this link is not present among all LMSM. Social support did not predict reduced problematic substance use among those reporting lower access to healthcare and lower collective efficacy. Results suggest LMSM reporting higher access to these resources yet low social support may be particularly vulnerable to problematic substance use.

3

8:00 AM-9:15 AM

UNDERSTANDING LINKS BETWEEN STRESS AND HEAVY DRINKING AMONG QUEER WOMEN IN INTERRACIAL/INTERETHNIC INTIMATE RELATIONSHIPS

Cindy B. Veldhuis, PhD¹¹Columbia University, New York, NY

Background: Queer women (e.g., lesbian, bisexual, queer, trans/nonbinary) face unique stressors related to their marginalized status (i.e., minority stress). Little research has examined stress and alcohol use within same-sex/gender interracial/interethnic (IRIE) couples, however differential marginalization and privilege may add additional stress which may, in turn, increase risks for heavy drinking. Using an intersectional framework, we examine the associations between individual- and couple-level stressors on alcohol use in these relationships.

Methods: Data come from the SOQIR study, a study of diverse women in same-sex/gender relationships living in the NYC area recruited for an online survey (N=215). The online survey included questions about relationship quality, individual- and couple-level minority stressors, and alcohol use.

Results: Findings suggest significant differences in the associations between stressors and heavy drinking comparing IRIE and monoracial couples. In terms of individual-level minority stressors, higher levels of adult stress ($aOR1.10$) and stress related to race/ethnicity ($aOR1.28$) were associated with higher odds for heavy drinking. There were no differences comparing IRIE and monoracial couples in these associations. In examining couple-level minority stressors, we found that couple-level discrimination ($aOR1.07$) was associated with higher odds of heavy drinking. There were significant interactions between relationship type and couple-level rejection ($aOR1.10$) and couple-level support ($aOR1.22$) on heavy drinking. Follow up comparisons indicate that women in IRIE couple relationships who are heavy drinkers report significantly higher levels of couple-level rejection and a higher lack of couple-level support compared to their light drinking counterparts, and to heavy drinking women in monoracial relationships. Higher levels of relationship stress were associated with higher odds of heavy drinking ($aOR1.20$); the interaction between relationship stress and relationship type was not significant.

Conclusions: In the U.S., almost half of queer women are in cohabiting/married relationships, but little research has focused on these relationships. Far less well understood are the stressors and strains on queer women's IRIE relationships. We found multiple stressors, such as relationship stress, that may increase heavy drinking risks for all queer women. Our findings also suggest unique stressors (couple-level rejection and lack of support) that may disproportionately increase risks among women in IRIE relationships. Our findings highlight important areas for couple-level interventions.

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MOVING THE FIELD OF PATIENT NAVIGATION FORWARD:
INCREASING RIGOR, INNOVATION, AND SUSTAINABILITYKristen J. Wells, PhD, MPH¹, Patricia A. Valverde, PhD MPH², Elizabeth Calhoun, MEd PhD³, Andrea J. Dwyer, BS⁴, Tracy A. Battaglia, MD MPH⁵¹San Diego State University, San Diego, CA; ²Colorado School of Public Health, Aurora, CO; ³University of Arizona, Tucson, AZ; ⁴The University of Colorado Cancer Center, Aurora, CO; ⁵Boston University School of Medicine/Boston Medical Center, Boston, MA

Patient navigation is an intervention model that aims to reduce barriers to obtaining recommended health care in a timely manner and to reduce cancer-related disparities. Since its origins in the 1990s, patient navigation has demonstrated efficacy in improving multiple types of cancer care, especially in the early detection of cancer. As a result, patient navigation has been integrated into oncology standards of care, leading to widespread implementation of the intervention model across the United States. While the model has been implemented in community organizations and healthcare settings across the country, navigation programs can be difficult to sustain, especially in lower resource settings. Patient navigation delivered by lay patient navigators is especially at risk to being unsustainable as a result of disruption in funding because of the difficulty of obtaining insurance or other reimbursement for navigation services. Therefore, there is a significant need to use better understand the implementation of patient navigation programs in the United States and identify innovative approaches to maximize efficiency and sustainability. This transdisciplinary symposium will examine cross-cutting issues related to the implementation of patient navigation and will include perspectives from the fields of public health, medicine, and psychology. Through three presentations, the symposium will examine: 1) the potential of the role of technology to enhance patient navigation effectiveness and efficiency; 2) the current organizational use of patient navigation metrics in the United States and the potential for improving the delivery of navigation with better use of metrics; and 3) the critical need for patient navigation programs to plan for sustainability. A brief overview of cross-cutting issues and the overall importance of the session from a national perspective will be provided by the chair. This symposium aims to identify gaps related to sustainability of patient navigation programs and provide ideas for novel solutions which can be examined through additional research.

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A FEASIBILITY STUDY COMPARING PATIENT NAVIGATION WITH
AND WITHOUT A SPANISH LANGUAGE CERVICAL CANCER EDU-
CATION TABLET APPKristen J. Wells, PhD, MPH¹, Laura Barnes, PhD², Gloria Arroyo, GED³, Sanjana Mendu, BS², Patricia Medina-Ramirez, MPH⁴, Janna R. Gordon, M.S.⁵, Sara Proctor, PA⁶¹San Diego State University, San Diego, CA; ²University of Virginia; ³Bay Care Faith Community Nursing; ⁴University of South Florida; ⁵SDSU/UC San Diego Joint Doctoral Program in Clinical Psychology, San Diego, CA; ⁶Catholic Mobile Medical Services, Dover, FL

Latinas in the US are more likely to be diagnosed with and die from cervical cancer than non-Hispanic white women. Patient navigation (PN) improves receipt of cervical cancer screening, but providing education about human papillomavirus (HPV) and cervical cancer is time consuming. We developed a tablet application (virtual patient educator [VPE]) to provide comprehensive cervical cancer and HPV education in Spanish. This randomized controlled trial examined feasibility of a study comparing PN alone to PN+VPE. Using convenience sampling, we recruited 64 Spanish-speaking Latinas (mean age: 41.3 years; mean education: 5.4 years) in need of cervical cancer screening according to the American College of Obstetricians and Gynecologists guidelines from two faith-based clinics in rural Florida. Participants were randomized to PN (n = 33) or PN+VPE (n = 31). A trained bilingual and bicultural lay patient navigator with more than three years of PN experience provided navigation in both study conditions. A bilingual research assistant collected survey data orally at baseline and 2-week follow-up using validated scales (Pap Test Beliefs and Cervical Cancer Screening Self-Efficacy scales) as well as questions from the Health Information National Trends Survey (HINTS; HPV knowledge). VPE acceptance was measured immediately after VPE use via 22 items of the Unified Theory of Acceptance and Use of Technology (UTAUT) questionnaire. The Patient Satisfaction with Cancer-related Care (PSCC) scale was administered at 2-week follow-up. Medical records were reviewed at 6 weeks to assess receipt of Pap test. Fisher's exact test compared receipt of Pap test at follow-up between PN+VPE and PN. Findings indicated high VPE acceptability, high satisfaction with cancer care in both groups, increased knowledge regarding HPV in both groups (PN: change from 39% to 50%; PN+VPE: change from 39% to 57%), and a trend towards higher receipt of Pap tests in PN+VPE (97%) compared to PN alone (85%; $p = .11$). While recruitment and randomization were feasible, follow-up survey data collection at 2-weeks was not; only 58% had completed follow-up surveys by 2 weeks whereas 90% had completed them by 1 month. Data collection using some HINTS questions and the Pap Test Beliefs and Cervical Cancer Self-Efficacy scales was also not feasible for various reasons, including high negative skewness (self-efficacy), low difficulty (beliefs), low variability (beliefs), and difficulty scoring the measure as planned (beliefs and HINTS). Findings from this study indicate the VPE is a feasible and acceptable addition to PN and may improve HPV knowledge and rapid receipt of cervical cancer screening. New approaches to data collection should be used in a future larger scale study examining whether use of the VPE improves PN efficiency and reduces PN costs.

2

8:00 AM-9:15 AM

A NATIONAL SURVEY OF THE USE OF ONCOLOGY PATIENT NAVIGATION METRICS AND REPORTING IN THE UNITED STATES

Patricia A. Valverde, PhD MPH¹, Elizabeth Calhoun, MEd PhD², Andrea J. Dwyer, BS³, Kristen J. Wells, PhD, MPH⁴¹Colorado School of Public Health, Aurora, CO; ²University of Arizona, Tucson, AZ; ³The University of Colorado Cancer Center, Aurora, CO; ⁴San Diego State University, San Diego, CA

Patient navigation (PN) is being implemented across the country, but it is not clear how the process of navigation delivery and outcomes of PN are being measured in oncology settings. The American Cancer Society Evidence Based Promising Practices Task Group of the National Navigation Roundtable (NNRT) collaborated with the Statistics & Evaluation Center to administer a web-based survey to member organizations and individuals across the US to identify challenges, successes, barriers, and facilitators to implementation of oncology PN metrics. This study was designed to: 1) gather information regarding approaches that navigators and program administrators use to track outcomes of PN; and 2) identify additional tools and resources needed by patient navigators and PN programs to support their work. The 15-minute survey was administered online, using a web-based, open link format. This link was distributed to member organizations to share with individuals involved in PN. The survey was open from April 17, 2019 to July 3, 2019, and 750 completed surveys were received. Participants represented organizations in all 50 states and Puerto Rico. Of the 750 respondents, 223 (30%) were administrators or supervisors of PN programs. Eighty-two percent report being funded through institutional funds. Seventy-five percent participate in the Commission on Cancer, while only 14% participate in the Centers for Medicare & Medicaid Services (CMS) Oncology Care Model. A total of 538 organizations report collecting metrics, with 77% collecting patient-level data, but only 22% collecting financial or operational data, such as ER visits and unplanned hospitalizations. In examining whether certain organizational characteristics were more strongly associated with systematic measurement of navigator productivity, we found organizations that participate in an external program (i.e., CMS's Oncology Care Model) are more likely to systematically track and report population-level care measures. This is unsurprising given that data collection and reporting is a requirement of many of these programs. However, we also found that organizations under-utilize information they are required to collect (i.e. it is used to report to funders and programs but less frequently to inform internal and/or patient operations). Participants also reported barriers to collecting metrics. In conclusion, in our nationwide study, most organizations with PN programs are collecting patient-level data, and most use these data for reporting to external programs, but not always for internal programmatic purposes. There is an opportunity for organizations to better understand and potentially improve their PN programs using metrics and further the field's understanding of PN implementation. Finally, lay PN program sustainability depends in a large part on metrics and participating in reimbursement models that can support their work.

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8:00 AM-9:15 AM

PLANNING FOR SUSTAINABILITY FOR PATIENT NAVIGATION FOR PREVENTING CANCER SCREENING IN A STATEWIDE PROGRAM: A FRAMEWORK FOR SUSTAINABILITY

Andrea J. Dwyer, BS¹¹The University of Colorado Cancer Center, Aurora, CO

Background: Recent publications speak to increased utilization of patient navigation and favorable impact on patient outcomes but also speak to the needs of reimbursement, implementation, maintenance, and sustainability of these programs, specifically for lay navigators. An estimated 40% of all new public health interventions do not last beyond a year or two after the end of initial funding. The high costs of program termination further highlight the need to understand which factors contribute to sustainability and how they can be measured and improved.

Methods: To address this specific issue, the University of Colorado Cancer Center, with initial funding from the American Cancer Society, developed a toolkit, curriculum and an online platform to help those working in colorectal cancer screening and prevention implement sustainability planning approaches. This framework adapts the Program Sustainability and Assessment Tool, developed by Washington University in St. Louis for use in clinical and community settings and endorsed by the Centers for Disease Control and Prevention. Currently, the Colorado Cancer Screening Program (CCSP) for Patient Navigation, of the University of Colorado Cancer Center and funded by the Cancer Cardiovascular and Pulmonary Disease Program, is implementing this curriculum with 25 safety net clinic systems in Colorado, in anticipation of a ten-year grant cycle ending in 2021. Systems are scored on a 1 (lowest) to 7 (highest) scale around the domains of: Engaging Staff and Leadership; Organization Context & Capacity; Funding Stability; Engaged Community; Communication, Planning & Implementation; Workflow Integration; and Monitoring and Evaluation.

Results: The assessments and goal planning process have been fully implemented in 15 systems, including the onboarding of 10 systems this current fiscal year. Based on results available from the first group of five clinic systems, two-thirds of clinic systems have identified Funding Stability as one of their priorities for navigation sustainability; however, Workflow Integration and Outcomes and Effectiveness were identified at the same level of priority, confirming the notion that sustainability is much broader than only funding. Goal setting is established based on system priority domains, and the program staff for CCSP are providing technical assistance to help ensure sustainability of the navigator position post grant funding; the program planners and advocates are also utilizing data from this process to inform state level policies to support the role of the patient navigator in the safety net settings of Colorado.

Conclusion: Sustainability planning is necessary to ensure efforts continue after grant and foundational supports are depleted. A deliberate approach with dedicated resources and commitment to ensure sustainability must be implemented well before the end of the grant funding cycles.

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IMPROVING ACCESS TO BEHAVIORAL INTERVENTIONS FOR VETERANS WITH CHRONIC PAIN: FROM OPPORTUNITIES IN PRIMARY CARE TO TELEHEALTH

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Chronic pain is a wide-reaching health concern that affects individuals, their families and communities. People with chronic pain are more likely to experience negative consequences related to pain, including reduced functionality, poor sleep, comorbid mental health issues, limited participation in valued activities, lost work productivity, and reduced quality of life. Veterans are disproportionately more likely to experience chronic pain compared to the general population, with 9.1% of veterans reporting severe pain compared to 6.3% among non-veterans. Further, approximately 40 to 60% veterans seen in primary care report experiencing chronic pain to their provider.

Evidence-based treatments for chronic pain emphasize the role of a biopsychosocial approach to care that endorses self-management skills and non-pharmacological options for the management of chronic pain. Unfortunately, individuals experiencing chronic pain may note significant barriers to participating in these therapeutic approaches. As a step towards increasing access, the proposed symposium highlights innovative approaches aimed to enhance treatment engagement through intervention delivery, ease of care availability, and promotion of self-efficacy for behavioral skills. Our first presenter will share rational and preliminary findings from a novel approach that seeks to connect older veterans with comorbid chronic back pain and depression to telephone coaching. These coaching calls are designed to encourage physical activity, thus ultimately improving function, mood, and pain among veterans with limited mobility, often living in rural areas. The second presentation describes rural-urban disparities in receipt of pain care in VA and the development of a hub-and-spoke telehealth model for delivering behavioral interventions for chronic pain to rural VA community outpatient clinics in four states in the Northwest. The third presentation will share data from pre-post study examining the effectiveness of an 8-week Acceptance and Commitment –based group intervention for chronic pain tailored to veterans seen in primary care. The final presentation will discuss pilot data from a program evaluation project assessing the efficacy of a team-based approach to care for veterans with complex chronic pain struggling to engage in rehabilitation efforts.

Combined these studies demonstrate the ability to provide care regardless of geographic location, availability of services, and cost of care by removing barriers that may limit participation in effective treatments for pain. Additionally, through the use of multiple treatment modalities (e.g., telephone, telehealth, groups, and teams) much needed care can be offered to a wider audience. This symposium will help disseminate approaches that improve access and reach of treatment options that may help reduce the burden of pain and improve quality of life.

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HELPING VETERANS WITH COMPLEX CHRONIC PAIN ENGAGE IN TREATMENT USING A COLLABORATIVE, TEAM-BASED APPROACH IN PRIMARY CARE

Carrie A. Bronars, PhD¹, Carolyn Buesgens, NP², Elzie Jones, PharmD³, Ashley Fike, PharmD³

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Evidence based treatments for patients with chronic pain entails participation in active, self-management strategies and care coordination with an interdisciplinary pain team. Unfortunately, chronic pain patients often do not have these resources easily accessible to them or are reluctant to try these services. Further, primary care providers are tasked with the enormous responsibility of helping patients manage their chronic pain as well as treat their other medical conditions. In an effort to support both the veteran and their provider, development of an interdisciplinary team, embedded within primary care, was created to partner with both parties to offer comprehensive care for individuals with chronic pain. The team consists of the veteran and their support person (if available) as well as a nurse practitioner, pharmacist, and psychologist who work together to develop individualized treatment goals that encourage active self-management skills for pain. Further, the team assumes pain care for the patient which affords primary care providers much needed time to address other patient concerns.

Program evaluation project concerning the effectiveness of this team approach is currently underway. A total of 14 veterans have agreed to work with the team thus far, and recruitment for additional participants are being sought out in primary care clinics in a VA hospital as well as several affiliated community clinics. The initial sample of patients are predominately male (100%), white/non-Hispanic (100%) between the ages of 47 and 71. A majority of the sample reported experiencing multiple pain conditions, such as back (100%), neck (57.1%), knee (63.4%), and neuropathic (50%) for an average of 17 years (SD=10). Morphine equivalent dose for these patients ranged from 0 to 480 mg. Approximately, 78.5% of the sample has been diagnosed with a mental health condition.

Outcomes are assessed using a self-report measures related to physical functioning (PROMIS-Pain Interference 6b), self-efficacy for pain management (Pain-Self Efficacy Questionnaire), degree of pain catastrophizing (Pain Catastrophizing Scale), and distress (9-item Patient Health Questionnaire, 7-item Generalized Anxiety Disorder Scale) at baseline, visit 3 and visit 6. At baseline, the sample of veterans endorsed limitations due to pain (T-score M=66.3; SD=3.2), pain catastrophizing (M=29.5, SD=12.0), and low self-efficacy for pain management (M=22.5, SD=11.8) in addition to moderate symptoms of depression (M=14.5, SD=6.5) and anxiety (M=10.1, SD=6.3). Preliminary findings suggest patients are open to participating in this program. Additionally, participants sampled noted difficulties in managing their chronic pain as evidenced by their self-report. Challenges for implementation of this team-approach in primary care will be reviewed as well as future directions and next steps for extending these services.

2

8:00 AM-9:15 AM

USING TELEHEALTH TO BRING BEHAVIORAL TREATMENTS FOR CHRONIC PAIN TO RURAL VA CLINICS

Jessica A. Chen, PhD¹, Hannah Gelman, PhD², Lisa Glynn, PhD³, Timothy Dawson, MD³, Steven B. Zeliadt, PhD⁴

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Chronic pain is a common and costly problem, especially among veterans (Nahan, 2017; Gaskin & Richard, 2012). Patients who reside rurally report greater functional impairment associated with pain (Goode et al., 2013), less access to behavioral interventions for chronic pain (Heapy et al., 2017), and higher rates of opioid prescribing (Garcia et al., 2019) than their urban counterparts.

To address rural-urban disparities in pain care, VA Puget Sound Healthcare System launched a pain telehealth pilot program in 2016. The pilot program utilized existing resources (i.e., staff and equipment) to add videoconferencing capability to existing, in-person behavioral offerings for chronic pain, such as pain education classes and cognitive-behavioral therapy groups.

The pilot telehealth program successfully delivered over 1,300 visits to 618 unique patients over a two-year period, suggesting that videoconferencing-based telehealth was a feasible and acceptable delivery method for behavioral chronic pain services. However, this represented only a 0.2% increase in the reach of specialty pain services to rural veterans with chronic pain. In contrast, during the same time period, there was a significant ($p < .001$) 2.3% increase in the reach of specialty pain services among urban veterans in the same healthcare system. These pilot findings suggest that adding telehealth capability to existing offerings alone may not be sufficient for increasing the reach of specialty pain services to rural veterans, and that rural VA patients lag behind urban VA patients in receipt of pain care.

The focus on this talk is on a regional initiative launched by the VA Northwest Network (“VISN 20”) and VA Puget Sound Healthcare System to better expand pain care to rural veterans. We will describe an expanded, telehealth-only clinical program, TelePain, that delivers biopsychosocial chronic pain care through videoconferencing to rural VA clinics in a four-state region (Alaska, Washington, Oregon, and Idaho) utilizing a hub and spoke telehealth model. We will also describe a one-year implementation study that involves collaboration between VA implementation researchers and the TelePain clinical program. The study will utilize an evidence-based strategy, implementation facilitation, to enhance the uptake of TelePain at three initial test sites and evaluate outcomes and costs associated with implementation.

3

8:00 AM-9:15 AM

IMPORTANCE OF ACCESSIBILITY TO BEHAVIORAL INTERVENTIONS IN PRIMARY CARE AND CONSIDERATIONS FOR GROUP INTERVENTION DEVELOPMENT

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Between half and three-quarters of veterans receiving primary care through the Veterans Health Administration (VHA) report chronic and persistent pain (Haskell et al., 2006; Kerns et al., 2003); effective patient-centered care requires convenient access to effective pain treatments in the medical center. Behavioral interventions, such as Acceptance and Commitment Therapy (ACT) have shown promise as treatments for chronic pain (Veehof et al., 2016). Unfortunately, when these evidence-based treatments are only offered in pain centers, many veterans may lack access due to limited availability of such services and a lack of need for intensive pain center care. In an effort to provide services that are easily accessible to veterans, authors developed an 8-week Acceptance and Commitment Therapy (ACT)-based group intervention for primary care patients with chronic pain that has few exclusions and a straightforward referral process.

Despite reports of ongoing pain being a problem for a significant number of women veterans (Haskell et al., 2006), few women veterans participated in the intervention. Consultation with referring providers in mental health and primary care revealed that many women veterans declined because they did not feel comfortable participating in a group with men. As a way to increase access for women veterans and promote VHA directives to increase alternative options to mixed gender groups (VHA Directive 1330.01, Health Care Services for Women Veterans), group facilitators also began offering a women-only group with the same content material as presented in the general group. This group has been well-received by women veterans as seen in the number of referrals for female veterans.

A quality improvement project assessing the feasibility and accessibility of these groups is currently underway. Initial results suggest improvement in activity engagement, lower pain interference, improved mood, and reduced anxiety symptoms. Additionally, 41.7% of the entire sample is women, which is notable given the lack of data regarding women in research studies (Huang et al., 2019). Feedback from veterans in the women-only group was gathered using the “Start, Keep, Stop” method, and women specifically requested the continuation of the women-only group. An easily accessible ACT-based primary care group appears to have positive outcomes for all veterans, and offering a women-only group improved participation for women veterans. The author intends to review strategies for developing group content, challenges for care implementation, importance of accessibility in primary care, and considerations for female veterans.

4

8:00 AM-9:15 AM

DEVELOPING A NOVEL TELEPHONE DELIVERED BEHAVIORAL INTERVENTION FOR OLDER VETERANS WITH COMORBID CHRONIC BACK PAIN AND DEPRESSION: MOVING IN THE HOME

Una E. Makris, MD, MSc¹, Ailing Yang, BS², W. Cheng Yuet, PharmD³, LaDonna Saxon, PhD⁴, Liana Fraenkel, MD⁵, James LePage, PhD⁶¹UT Southwestern Medical Center, Dallas VA, Dallas, TX; ²UT Southwestern Medical Center; ³UNTHSC; ⁴Dallas VAMC, Dallas, TX; ⁵Yale, New Haven, CT; ⁶Dallas VAMC

'Moving to Improve Chronic Back Pain and Depression in Older Adults' (MOTIVATE) is a novel 8-session, 12-week, telephonic behavioral intervention targeting older adults with chronic low back pain (cLBP) and depression. Telephone delivery of this behavioral intervention is ideal especially since older adults with cLBP are often mobility limited, and many veterans live in rural areas far from community based outpatient clinics. To improve back pain-related disability and depression, a health coach utilizes motivational interviewing and goal setting to increase physical activity. Following a single-arm roll-out of MOTIVATE, we conducted interviews with stakeholders to refine its content and our procedures.

The PARiHS (Promoting Action on Research Implementation in Health Services) framework was used to develop the discussion guide and facilitate interviews with Veterans who received MOTIVATE, primary care providers (PCP), clinic directors, and a health coach. This pilot study enrolled 8 Veterans who were predominately white (75%), male (87%), with a mean age of 70 years. The mean pain intensity score was 7.3/10; back pain-specific Roland Morris Disability score was 16.5/24; and depression (PHQ-9) score was 16.7/27. Stakeholders provided valuable feedback on how to modify MOTIVATE. Veterans engaged well with the health coach, were motivated to walk with a pedometer, and felt that being more active reduced pain and depression. PCPs attribute success of the intervention to the personal qualities and engagement of the health coach. Interviews also suggested how elicited values and goals identified by the veteran can be useful to PCP and entered into the electronic medical record to assist in the management of other chronic medical conditions. The health coach noted that Veterans were able to link value concordant goals to physical activities. The MI component, used by the coach, was critical to help participants achieve a readiness to change in order to effectively set goals linked to values and work on the action plans in between sessions. Participants who were hospitalized for other comorbid conditions, had social stressors, or were not motivated or ready for change struggled to complete between-session activities and goals. Flexibility to conduct the intervention over the phone, in the home, was particularly appealing for Veterans living over 50 miles from the nearest facility.

This pilot study showed that we were able to effectively recruit older Veterans with cLBP and depression and deliver MOTIVATE via telephone. Feedback from stakeholders regarding the iterative refinement of recruitment, study procedures, and content will aid the future evaluation and implementation of MOTIVATE.

Symposium 74

8:00 AM-9:15 AM

APPLYING ECOLOGICAL MOMENTARY ASSESSMENT AND DAILY DIARY METHODS TO UNDERSTAND PARENT-CHILD DYADIC INFLUENCES ON HEALTH

Chih-Hsiang Yang, PhD¹, Nanette Lopez, PhD, MS/MS², Sydney G. O'Connor, PhD³, Christine H. Naya, MPH⁴, Kirsten Davison, PhD⁵¹University of South Carolina, Los Angeles, CA; ²Northern Arizona University, Flagstaff, AZ; ³National Institutes of Health, Washington, DC; ⁴University of Southern California, Pasadena, CA; ⁵Boston College, Chestnut Hill, MA

Health behaviors established in childhood have a profound influence on disease susceptibility later in life. In everyday family contexts, parents' health-related parenting practices and their psychological states may play a role in shaping children's health behaviors. Evidence suggests that children's physical activity, dietary intake, and sleep patterns can be explained by levels of parenting support and parental stress. On the other hand, children's stress levels may also impact parents' health outcomes. An individual's health behaviors thus cannot be fully explained in isolation without considering other family members' behavioral or psychological influences. Previous cross-sectional studies have demonstrated parental influence on children's health or the reciprocal influence between parents and children. Few studies to date have used intensive longitudinal designs to investigate how these associations may unfold at the day level or within-day level. Real-time data capture (RTDC) approaches, including ecological momentary assessment (EMA) and daily diary methods can capture behaviors and experiences in naturalistic settings overtime to uncover the micro-temporal interpersonal interplay between parents' and children's health. The three presentations in this symposium applied EMA and daily diary methods to investigate within-day and day-to-day coupling in stress, dietary behavior, and sleep quality in parent (father or mother)-child dyads. The first presentation examines whether there are between-person and within-person effects of father's encouragement and preparation of fruit and/or vegetable behaviors on their child's daily fruit and/or vegetable consumption across one week. The second presentation applies the actor-partner interdependence model (APIM) to understand whether there are interdependencies of stress and sleep health among mother-child dyads at the day level across six measurement waves (three years). The third presentation investigates the synchrony of both day-level perceived stress and the stress hormone, salivary cortisol, in mother-child dyads across four days. Collectively, the three presentations uncover the daily interpersonal influences between parents' and children's health. Collecting dyadic EMA and daily diary data is time and resource-demanding, and it requires special consideration in modeling nested intercorrelated data. However, applying RTDC methods in family dyads can advance our knowledge in understanding health behaviors occurring in family context which, in turn, provides valuable insights for promoting and sustaining healthy lifestyles within families.

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8:00 AM-9:15 AM

DADS MATTER! THE ASSOCIATION OF EVERYDAY PATERNAL DIETARY-RELATED PARENTING PRACTICES WITH CHILDREN'S FRUIT AND VEGETABLE CONSUMPTION

Nanette Lopez, PhD, MS/MS¹, Chih-Hsiang Yang, PhD², Bridgette Do, MPH³, Genevieve F. Dunton, PhD, MPH⁴, Britni Belcher, PhD⁴

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Failure to assess how fathers' dietary-related parenting practices contribute to children's obesogenic behaviors leaves a gap in understanding the etiology of childhood obesity. Examining within-day variability in fathers' dietary-related parenting practices may be critical to understanding how fathers' daily behaviors and fathering roles may affect their children's diet. In this study, ecological momentary assessment (EMA) methods with real-time mobile surveys were used to examine the between-subject (BS) and within-subject (WS) effects of paternal encouragement and preparation of fruit and/or vegetables (F/V) on their child's daily F/V consumption. Fathers ($n=37$, $M_{age}=34.7\pm17.0$ years) and their children ($M_{age}=12.0\pm1.0$ years, 55.6% female) completed one 7-day EMA, with up to four random prompts on weekdays and eight random prompts on weekends. Fathers reported if they had encouraged their child to eat F/V and if they had prepared or cooked F/V for their child over the previous two hours. Children reported if they consumed any F/V over the previous two hours. After controlling for temporal factors including time of day and weekend (vs weekday), results from multilevel logistic models indicated that in the WS level, greater paternal encouragement for F/Vs ($OR = 2.10$, $p < 0.05$) and paternal preparation of F/Vs ($OR = 2.44$, $p < 0.05$) were associated with greater child report of eating F/Vs. No associations were significant in the BS level. Results from this study support the positive within-person coupling between fathers' dietary-related parenting practices and children's F/V consumption. Future studies should explore the long-term effects of fathers' dietary parenting practices on their children's diets and obesity risk.

2

8:00 AM-9:15 AM

DAILY ASSOCIATIONS OF PERCEIVED STRESS AND EXTERNAL STRESSORS WITH SLEEP HEALTH IN MOTHER-CHILD DYADS

Sydney G. O'Connor, PhD¹, Yue Liao, MPH, PhD², Tyler B. Mason, PhD³, Britni Belcher, PhD³, Jimi Huh, PhD³, Susan Redline, MD⁴, Genevieve F. Dunton, PhD, MPH³

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Background: Adequate sleep is essential for health and well-being, and elevated stress may lead to sub-optimal sleep health. Mothers' and their children's dyadic external stressor experiences and subjective stress appraisal may have implications for not only their own sleep but also the sleep health of one another. This study used ecological momentary assessment (EMA) to examine the daily dyadic effects of stress on self-reported sleep health in mother-child dyads.

Methods: Data are from a longitudinal study of mothers and their 8-12-year-old children. Dyads completed up to six semi-annual week-long assessments using an EMA smartphone application to self-report on past two-hour perceived stress and external stressors (e.g., "tension with coworker" [mother]; "having a lot of homework to do" [child]) throughout the day as well as nightly sleep health (i.e., quality, duration). The Actor-Partner Interdependence Model framework was used to examine the daily (i.e., within-subjects; WS) and usual (i.e., between-subjects; BS) associations of external stressors and perceived stress with each dyad member's own nightly sleep (i.e., actor effects), as well as the nightly sleep of the other dyad member (i.e., partner effects), controlling for design variables and potential confounders.

Results: The analytical sample consisted of 194 dyads with 7,592 observation days (mean: 39 days/dyad). At the BS level, mothers of children who experienced a greater number of external stressors than their peers reported shorter sleep duration, on average ($b = -21.54$, $p < 0.05$). At the WS level, days with higher than usual perceived stress predicted lower sleep quality that night for both mothers ($b = -0.06$, $p < 0.01$) and children ($b = -0.08$, $p < 0.05$). Additionally, there were WS partner effects such that on days when a mother experienced greater than her own usual number of external stressors, the child had shorter than usual sleep duration that night ($b = -5.85$, $p < 0.01$), and on days when a child experienced greater than their own usual number of external stressors, the child's mother had lower sleep quality that night ($b = -0.05$, $p < 0.05$).

Conclusion: This study revealed interdependencies of stress and sleep health among mother-child dyads, in which mothers' and children's sleep health was negatively impacted by both individual and partner's stress experience. The larger family unit should be considered in behavioral interventions seeking to reduce stress and improve daily sleep health.

3

8:00 AM-9:15 AM

PSYCHOLOGICAL AND BIOLOGICAL STRESS SYNCHRONY IN MOTHER-CHILD DYADS: EFFECT MODIFICATION BY FINANCIAL HARSHIP

Christine H. Naya, MPH¹, Darby Saxbe, PhD², Genevieve F. Dunton, PhD, MPH², Britni Belcher, PhD²¹University of Southern California, Pasadena, CA; ²University of Southern California, Los Angeles, CA

Background: Mother-child synchrony—the reciprocation of shared affect and biology—influences child development and health. However, the familial factors that influence synchrony are still unclear. Lab studies have found greater synchrony in both low- and high-risk families, though “risk” has often been defined as internal challenges to a dyad’s relationship, such as psychopathology and attachment. Few have examined external challenges, such as financial stress (FS), and even fewer have captured the daily fluctuation of stress within families in a real-world setting. Therefore, this study examined the mother-child synchrony of day-level perceived stress (PS) and the stress hormone cortisol and whether this synchrony differed by FS.

Methods: Participants included 160 mother-child dyads from the Mothers and their Children’s Health Study. Each mother (mean age=42.7(±6.0)yrs) and child (mean age=11.3(±1.1)yrs, 56% female) reported PS up to eight times daily for four days via ecological momentary assessment on smartphones. On the same four days, dyads also collected salivary cortisol four times daily from which area under the curve (AUC) was calculated. FS was quantified using a seven-item FS survey questionnaire and dichotomized into High/Low based on the median score. Multilevel models were used to account for clustering of observations within dyads, and variance was partitioned to between- and within-subjects. Models tested the interaction of mothers’ day-level PS and cortisol AUC with FS in predicting children’s same day-level PS and cortisol AUC. Models controlled for day of week, child’s sex, age, race, mother’s marital status, education, and employment.

Results: Significant day-level synchrony was found for PS ($\beta=0.06$, $SE=0.02$, $p<0.01$) and cortisol AUC ($\beta=0.22$, $SE=0.03$, $p<0.01$). The interaction term by FS was significant for cortisol AUC synchrony ($\beta=-0.17$, $SE=0.07$, $p<0.05$), such that there was stronger synchrony in dyads reporting low ($\beta=0.30$, $SE=0.04$, $p<0.01$) vs. high FS ($\beta=0.08$, $SE=0.06$, $p=0.15$). There was not a significant interaction for FS and PS synchrony.

Conclusions: This is one of the few studies to date that has identified stress synchrony in mother-child dyads in a naturalistic setting using both self-reported and physiological measures. Stronger cortisol AUC synchrony in dyads with low FS may suggest the greater emotional and mental bandwidth in these families that allow for more co-regulation of physiological stress. Findings suggest the importance of considering social and financial environment when conducting family-focused stress interventions.

Symposium 75

8:00 AM-9:15 AM

PUTTING PEOPLE FIRST: IMPROVING CHRONIC DISEASE RESEARCH AND CARE VIA PERSON-FIRST LANGUAGE AND PERSON-CENTERED APPROACHES

Michael Stirratt, PhD¹, Janet S. de Moor, PhD, MPH², Deborah Young-Hyman, Ph.D.CDE, FTOS, Fellow SBM³, Jamie L. Studts, PhD⁴, Anna McColister, BA⁵, Rebecca Bartlett Ellis, PhD, RN, ACNS-BC⁶¹NIMH, Bethesda, MD; ²National Cancer Institute, Rockville, MD; ³NIH, Bethesda, MD; ⁴University of Kentucky College of Medicine, Lexington, KY; ⁵VitalCrowd Health/Four Lights Consulting, Washington, DC; ⁶Indiana University School of Nursing at Indianapolis, Indianapolis, IN

This symposium will highlight how person-first and person-centered approaches can strengthen efforts to support patient use of medicines, increase patient engagement in clinical trials, and improve health outcomes in chronic disease. Person-first language prioritizes the individual over their medical condition by naming the person first and their condition second. Since its origin with literature and advocacy around developmental disabilities, person-first language has been adopted in HIV/AIDS research (e.g., “person living with HIV”) and there are increasing moves to adopt and recommend person-first language in other areas of chronic illness (e.g., “person with diabetes” rather than “diabetic.”). Words matter and growing use of person-first language can help reduce stigma, empower individuals, and better attend to the whole person when managing chronic disease. In addition, new methods of involving patients in clinical research are evolving beyond utilizing focus groups and patient advocates to developing innovative crowdsourcing and web-based tools to ensure that patients are engaged as meaningful collaborators in the design and conduct of clinical trials. Concurrently and in parallel, patient-centered approaches have gained traction as important ways to support individuals with chronic illnesses. Patient-centered care seeks to understand the patient’s experiences and perspectives, provide clear information and treatment options to patients, respect patient autonomy and preferences, and focuses on the whole person rather than their disease or symptoms alone. A mix of patient-centered approaches have been advanced, including models of shared decision making and collaborative care. What is the evidence for their impact and value for improving chronic disease management? This symposium will seek to outline the mechanisms through which person-first language, novel methods for patient engagement in research, and person-centered approaches may improve behavioral medicine research, facilitate better health care and ultimately increase our impact on health outcomes.

The symposium will consist of four presentations (below), followed by brief comments from a discussant.

- Person-centered language facilitates shared decision making and desired outcomes in diabetes care
- The importance of patient-driven research design
- Shared-decision making and evidence for its impact on patient-centered health outcomes
- Advancing person-centered, minimally disruptive medicine

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2

8:00 AM-9:15 AM

PERSON CENTERED LANGUAGE FACILITATES SHARED DECISION MAKING AND DESIRED OUTCOMES IN DIABETES CARE

Deborah Young-Hyman, Ph.D.CDE, FTOS, Fellow SBM¹¹NIH, Bethesda, MD

A model of person-based language and shared decision making treatment paradigms in diabetes care will be presented. The mechanisms by which this improves medical outcomes and wellbeing will be summarized from the extant literature. Suggestions for facilitation and overcoming barriers to implementation will be addressed. In addition, the presentation will address how this paradigm for care changes system issues for medical care and reimbursement.

3

8:00 AM-9:15 AM

SHARED-DECISION MAKING AND EVIDENCE FOR ITS IMPACT ON PATIENT-CENTERED HEALTH OUTCOMES

Mary C. Politi, PhD¹¹Washington University in St Louis, School of Medicine, St Louis, MO

Shared decision making provides a model for patients and their clinicians to engage in a deliberative, communicative process about health decisions in which there is no clear best option from an evidence standpoint. There is an increasing expectation, both nationally and internationally, that patients will be significant partners in decisions about their health. Therefore, it is critical to better understand the state of the science of shared decision making and how it impacts patient-centered outcomes.

4

8:00 AM-9:15 AM

THE IMPORTANCE OF PATIENT-DRIVEN RESEARCH DESIGN

Anna McCollister, BA¹¹VitalCrowd Health/Four Lights Consulting, Washington, DC

Most clinical research is designed to benefit and convenience of everybody involved in the process but trial participants. The outcomes measured are often chosen because they are easy to collect and conform to the narrow definitions of safety and efficacy as determined by researchers, regulators, payers and sponsors. Clinical visit schedules are based on the typical work day of researchers, without regard to the schedule demands of patients or caregivers, and compensation for participation rarely considers the opportunity costs of participants or the burden the additional time commitment places on people living with complex health conditions. Trials targeting special populations, such as older, more complex or pediatric patients can be even more burdensome, because the burden falls not only on them but on those who care for them. In addition, for researchers and sponsors, the stakes for designing a trial are high, impacting the ability for young researchers to gain funding and get published and for product manufacturers to achieve regulatory approval or pricing and reimbursement that supports business success. Few are willing to take risks with trial design, even if those risks could lead to the development of more meaningful science that is more likely to positively impact patient health and care. For government-sponsored research, even if researchers are willing to take risks and try something novel and the funding agency is willing to support a new approach, grant reviewers may not share the belief that novel approaches are needed, fearing that if they score the grant high and their peers do not that they will lose credibility. As a result, research stagnates. Novelty is punished and the rate of progress in advancing science slows. The consequences for patients of the stagnation can be tragic. This process is fixable. But, how?

Patients, caregivers and community physicians can play an important role in changing the dynamics that create and enforce mediocrity. But, for that to work, the full ecosystem of incentives, work flow and rewards needs to be addressed. For years, we've been tinkering along the margins only to wonder why our results aren't more meaningful. We need platforms and processes for incentivizing and enabling patient-driven design of all aspects of clinical research. The efforts need to be scalable, flexible, replicable and transparent. My presentation will discuss possible models and methods for defining a way forward.

Symposium 76

8:00 AM-9:15 AM

PSYCHOSOCIAL FACTORS LINKED TO PERSISTENT SYMPTOMS FOLLOWING MILD TRAUMATIC BRAIN INJURY

Jonathan Greenberg, PhD¹, Sarah Bannon, MS², Katherine Green, MSc³, Molly Cairncross, Ph.D. Clinical Neuropsychology⁴, Paul R. King, PhD⁴

¹Massachusetts General Hospital/Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, MA; ³University of British Columbia, Vancouver, BC, Canada; ⁴VA Center for Integrated Healthcare, Buffalo, NY

Mild Traumatic Brain Injuries (mTBIs) are common and costly. Most people demonstrate good recovery from mTBI but persistent symptoms are distressing and disabling.

Recent evidence lends support for a biopsychosocial model of mTBI. To date, predictive models have focused on biological factors, despite evidence that psychosocial variables (e.g., pre-injury mood problems) strongly contribute to the development and maintenance of persistent symptoms and negative health outcomes. Identifying modifiable risk factors is a critical aspect of improving early detection and prevention efforts. This symposium presents several studies of psychosocial risk factors linked to persistent symptoms following mTBI. First, *Katherine Green* will summarize findings from several studies of somatization and its relationship to persistent mTBI symptoms. Next, *Jonathan Greenberg* will present findings related to mediators of the link between anxiety and post-concussive symptoms. *Molly Cairncross* will then discuss the onset and course of fear avoidance behaviors in connection to mTBI outcomes and treatment. *Sarah Bannon* will discuss the social/relational context of mTBI and the bidirectional link between symptoms and relationship functioning. Finally, *Paul King* will place these findings in the context of behavioral treatment of mTBI will discuss future directions.

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1

8:00 AM-9:15 AM

COGNITIVE AND BEHAVIORAL MEDIATORS OF THE ASSOCIATION BETWEEN ANXIETY AND POST-CONCUSSION SYMPTOMS

Jonathan Greenberg, PhD¹, Ryan Mace, MS², Christopher Funes, BS³, Noah Silverberg, Ph.D., R. Psych., ABPP⁴, Grant Iverson, PhD⁵, Ana-Maria Vranceanu, PhD¹

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Despite growing evidence that anxiety is critical in the development and maintenance of post-concussion symptoms following mild traumatic brain injury (mTBI), little is known about potential mechanisms through which anxiety may affect these symptoms. Here, we tested the strength and reliability of cognitive (pain catastrophizing) and behavioral (limiting behaviors) pathways mediating the relationship between anxiety and post-concussion symptoms among patients with mTBI. Patients with mTBI (N=57) completed self-report measures of anxiety, post-concussion symptoms, pain catastrophizing, and limiting behavior. Following preliminary simple-mediation models (for pain catastrophizing and limiting behavior separately), we ran a multiple-mediation model (pathways modeled simultaneously). Bootstrapping with 10,000 resampling iterations assessed mediation reliability. In preliminary simple mediation models, both pain catastrophizing ($\beta=0.24$, 95% CI=0.03-0.44, $p=.02$) and limiting behavior ($\beta=0.14$, 95% CI=0.03-0.26, $p=.01$) partially mediated the relationship between anxiety and post-concussion symptoms. In the multiple mediation model, pain catastrophizing was a less reliable but numerically stronger mediator ($\beta=0.19$, 95% CI=-0.01-0.38; $p=.05$) and explained more variance in post-concussion symptoms ($R^2=0.41$) than limiting behavior ($\beta=0.10$, 95% CI=0.02-0.21, $p=.03$; $R^2=0.22$), although mediators didn't significantly differ in strength ($\beta=0.08$, 95% CI=-0.16-0.32; $p=.49$). Results provide novel evidence for the role of pain catastrophizing and limiting behavior in explaining the association between anxiety and post-concussion symptoms. Addressing both factors may improve the recovery trajectory of individuals with mTBI. Emphasizing limiting behavior may yield more consistent and reliable effects. Results support developing interventions to directly target anxiety, pain catastrophizing, and activity engagement despite symptoms, to decrease symptom severity among patients with mTBI.

2

8:00 AM-9:15 AM

1-MONTH POST-CONCUSSIVE COMPLAINTS ARE LINKED TO ROMANTIC RELATIONSHIP DISTRESS IN MTBI PATIENTS RECRUITED FROM AN ED SETTING

Sarah Bannon, MS¹¹Massachusetts General Hospital, MA

Mild Traumatic Brain Injury (mTBI; concussion) impacts millions annually and is linked to a host of emotional, cognitive, and physical challenges that have the potential to undermine the stability and quality of close relationships. Despite the high prevalence and consequences of mTBI, studies of relationship adjustment following brain injury have almost entirely focused on more severe forms of TBI, where the cognitive, physical, and emotional impact of injury is more chronic and debilitating, as well as more visible to others. The current study sought to contribute to this critical gap in literature by examining the impact of mTBI on the relationship satisfaction and emotional distress of individuals recovering from mTBI. Individuals (N=20) involved in current romantic relationships were recruited from a suburban Emergency Department (ED) during their visit for injuries related to mTBI. Eligible individuals included those with ED Glasgow Coma Scale scores of 14-15 who reported an injury within 72 hours of their ED visit and endorsed involvement in a romantic relationship for more than 1 year prior to injury. We excluded individuals based on the presence of neurodegenerative disorders, history of bipolar disorder and/or schizophrenia, prisoner status or police custody, and terminal illness. mTBI symptoms were measured around the time of injury using the Rivermead Post Concussion Symptoms Questionnaire (RPQ), and again 1-month post-injury. Relationship distress was measured in a similar fashion using the Couples Satisfaction Index (CSI). Linear regression were conducted examining the cross-sectional associations between concussion symptoms and relationship distress, while controlling for the influence of pre-injury retrospective ratings of relationship distress. Regression analyses indicated that 1-month ratings of mTBI symptoms demonstrated significant cross-sectional associations with self-reported relationship satisfaction ($b = -.34$; $p < .01$), after accounting for the influence of retrospective ratings of relationship satisfaction prior to injury ($b = .76$; $p < .001$). Findings from the present study contribute to a biopsychosocial model of adjustment following mTBI, and underscore the need for further assessment interpersonal relationships after injury.

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8:00 AM-9:15 AM

SOMATIZATION AND ITS RELATIONSHIP TO PERSISTENT SYMPTOMS AFTER MTBI

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Somatization, the process whereby emotional distress is expressed as unintentionally produced physical symptoms, can exacerbate the symptoms of organic medical conditions or can produce novel physical symptoms. Somatization may contribute to symptom persistence after mild traumatic brain injury (mTBI). The presentation will summarize the literature on the intersection between somatization and persistent symptoms after mTBI, and present recent findings from two studies from our research group: a chart review characterizing somatization in a sample of adolescents seen at a concussion clinic, and a prospective study of the relationship between patient history of functional somatic syndromes – medical conditions commonly affected by somatization – and symptom persistence after mTBI in an adult sample.

Study 1: Charts of adolescents with and without clinician identified somatization seen at a concussion clinic for persistent mTBI symptoms ($n=94$) were compared on demographics, injury characteristics, mTBI symptoms, mental health, medical service use, and school attendance. Adolescents with identified somatization, compared to those without, were more likely to have a history of premorbid chronic pain or medically unexplained symptoms, reported more severe and unusual mTBI symptoms, obtained more neuroimaging and health care after injury, and demonstrated more post-injury impairment in school attendance.

Study 2: Adults recruited from a concussion clinic ($n = 147$) were queried on their history of functional somatic syndromes (irritable bowel syndrome, chronic fatigue syndrome, and fibromyalgia), as well as their mental health history and demographic and injury characteristics. Participants also completed self-report mTBI symptom scales at study intake, and 1- and 3-month follow-up visits. A linear mixed effects model was used to evaluate the association between a history of no functional somatic syndromes, one functional somatic syndrome, or two or more functional somatic syndromes and mTBI symptoms over time. Patients with a history of two or more functional somatic syndromes were significantly more likely to experience more severe mTBI symptoms over time.

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8:00 AM-9:15 AM

FEAR AVOIDANCE BEHAVIOR AFTER MILD TRAUMATIC BRAIN INJURY

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Fear avoidance is a maladaptive coping style that occurs when negative appraisal of symptoms leads to the avoidance of activities and/or situations that are perceived to trigger them. It is related to disability in a number of health conditions (e.g., chronic pain) and emerging evidence suggests that it may be an important psychological factor that impacts outcome following mild traumatic brain injury (mTBI). A series of studies examining the association between fear avoidance and mTBI symptoms (e.g., headache, cognitive problems), the natural trajectory of fear avoidance, and its association with clinical outcomes following mTBI are presented. **Study 1:** In a sample of adults (N=53) with post-traumatic headache after mTBI, the strongest and most commonly avoided headache triggers were lack of sleep, stress, and mental exertion. Perceived sensitivity to headache triggers was correlated with avoidance of triggers ($r = 0.736$, $p < 0.001$). **Study 2:** Eighty adults with mTBI and post-traumatic headaches completed measures of cogniphobia (i.e., avoidance of mental exertion due to fear of developing a headache) and cognitive testing 2-3 months post-mTBI. Cogniphobia was associated with poorer memory performance while controlling for headache severity. Avoiding mental exertion was associated with other kinds of avoidance behavior, such as avoidance of physical activity and traumatic stress triggers. **Study 3:** Fear avoidance at mTBI clinic intake (N=87) predicted symptom severity (95% CI for $B = 1.22-6.33$) and greater disability (95% CI for $B = 2.16-5.48$) at 4-5-month follow up. Avoidance was also associated with an increased risk for depression (OR = 1.76, 95% CI = 1.02–3.02) and anxiety disorders (OR = 1.89, 95% CI = 1.16–3.19). **Study 5:** A new cohort of 84 adults with mTBI completed measures of avoidance, disability, and post-concussion symptoms at clinic intake and at 1- and 3-month follow-up. Avoidance behavior tended to decrease from clinic intake to 1-month follow-up. Higher avoidance behavior at clinic intake and increases in avoidance behavior over the month following clinic intake predicted greater disability at three-month follow-up, even after controlling for concussion symptom severity at intake. Taken together, these studies suggest that fear avoidance is important risk factor for persistent post-concussion symptoms, psychological health problems, and disability. These findings emphasize the need for behavioral interventions to target maladaptive coping styles post-mTBI.

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I GET BY WITH A LITTLE HELP FROM MY FRIENDS (OR DO I?): THE HIGHS AND LOWS OF SOCIAL SUPPORT IN PROMOTING HEALTH

Katherine Hoerster, PhD¹, Sarah B. Campbell, PhD², Kristen E. Gray, PhD, MS³, Briana L. Robustelli, PhD⁴, Ranak B. Trivedi, PhD⁵¹VA Puget Sound Healthcare System, Seattle Division, Research and Development Service, Seattle, WA; ²VA Puget Sound Health Care System - Seattle/University of Washington, Seattle, WA; ³VA Puget Sound Health Care System, Seattle, WA; ⁴VA Eastern Colorado Health Care System, Jamesville, NY; ⁵Stanford/VA Palo Alto, Menlo Park, CA

Recognizing the potency of social support in promoting optimal physical and mental health, healthcare systems and providers are increasingly involving patients' family, friends, and other peers in care. This symposium presents four studies that collectively demonstrate that prioritizing social support in care can be a powerful treatment component, while also posing both practical and complex challenges such as scheduling and navigating communication issues. Presentations will highlight key considerations for addressing and integrating social support in care, exemplified by research conducted among U.S. veterans, which is broadly applicable to behavioral medicine and health promotion research and programs. The chair (KH) will present the extant literature and a framework, followed by briefly presenting national epidemiologic findings showing that veterans have less social support than civilians across several social support domains. KG will present qualitative work reflecting the duality of social support as help and hindrance in diabetes self-management, serving as the foundation for an in-development intervention. KH and KG will highlight gender differences detected in their respective studies. BR will present qualitative findings from a group behavioral weight management intervention for people with PTSD, reinforcing KG's findings that social support can be both a potent facilitator of health behaviors, but also a source of barriers to success. SC will then describe promising quantitative results from a pilot study of a PTSD intervention focused on promoting social engagement among veterans with support deficits. Lastly, the discussant (RT), an expert in the role caregivers play in mental health and chronic disease management and caregiver-focused interventions, will synthesize the presented work and how it informs a path forward for behavioral medicine researchers and clinicians. Critical considerations will include measurement of social support in clinical care; direct involvement of social supports vs. indirectly empowering people to enhance their social support; importance of targeting specific groups with support deficits (e.g., female veterans); and novel methods of reaching and engaging social supports, such as telehealth, social media, and blogs. With healthcare systems like the Veterans Health Administration increasingly implementing social support-focused programs—such as evidence-based couple and family therapy, coaching people on how to encourage their veteran loved ones to engage in care, and integrating peer support services into medical and mental health care—it is important to strategically approach how social support is integrated into care. Thus, this symposium will highlight the nuanced and complex role of social support in promoting health, and the challenges and opportunities of addressing and integrating social support in care.

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8:00 AM-9:15 AM

DIFFERENCES IN FUNCTIONAL AND STRUCTURAL SOCIAL SUPPORT AMONG FEMALE AND MALE VETERANS AND CIVILIANS

Katherine Hoerster, PhD¹, Sarah B. Campbell, PhD², John Fortney, PhD³, Tracy Simpson, PhD⁴, Kristen E. Gray, PhD, MS⁵

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Background: Social support is an important correlate of health behaviors, health outcomes, and mortality. A few studies suggest veterans have lower social support than civilians, but interpretation is hindered by methodological limitations, such as lack of adjustment for important confounders. Although women in the general population have larger social networks than men, female veterans are less likely to be married and live with others, which could influence how readily they can draw on social support benefits. This study examined veteran-civilian differences on several dimensions of social support and whether differences varied by sex.

Methods: We performed a cross-sectional analysis of the 2012-2013 National Epidemiologic Survey of Alcohol and Related Conditions-III (NESARC-III), a nationally-representative in-person structured diagnostic interview. The sample included 34,331 survey respondents (male veterans=2,569; female veterans=356). Functional social support was measured with the Interpersonal Support Evaluation List-12. Structural social support, specifically social network size and diversity, was measured with the Social Network Index. We employed linear regression to estimate veteran-civilian differences in social support and examined whether differences varied by sex with interactions. Presented analyses were adjusted for socio-demographic characteristics, childhood experiences, and physical and mental health.

Results: Compared to civilians, veterans had lower social network diversity scores (difference [diff]=-0.13, 95% Confidence Interval [CI] -0.23, -0.03). Among women but not men, veterans had smaller adjusted social network size (diff=-2.27, 95%CI -3.81, -0.73) than civilians. Further analyses revealed that smaller social network sizes were most pronounced among the religious groups, volunteers, and coworkers with whom female veterans had regular contact. Although the interaction was not significant, among men, veterans had lower adjusted social network diversity scores than civilians (diff=-0.13, 95%CI -0.23, -0.03), while the difference was similar but did not reach statistical significance among women (diff=-0.13, 95%CI -0.23, 0.09). There was limited evidence of differences in functional social support.

Conclusions: After accounting for factors that influence military entry and social support, veterans reported significantly lower structural social support, which may be attributable to issues common in Veterans that affect relationships, such as reintegration challenges and geographic mobility. Findings suggest veterans could benefit from targeted programs to enhance their structural social support and improve downstream outcomes, such as veterans' disproportionate disease burden and premature mortality, with female veterans appearing to be in greatest need of such programming.

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8:00 AM-9:15 AM

PRELIMINARY OUTCOMES OF A BRIEF INTERVENTION TO ENHANCE SOCIAL SUPPORT AMONG VETERANS WITH PTSD

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Background: Most Veterans with post-traumatic stress disorder (PTSD) are initially treated for PTSD in Primary Care Mental Health Integration (PCMHI). Poor social support in this population is a risk factor for lack of engagement, non-response to treatment, and suicide. Social support should be assessed and addressed early in treatment, per the Veterans Affairs/Department of Defense Clinical Practice Guidelines for the treatment of PTSD. Thus, there is a need for brief, acceptable and accessible social support enhancement interventions to produce optimal outcomes in PCMHI or prepare Veterans for Evidence-Based Psychotherapies delivered in specialty care.

Methods: In an open pilot trial (n = 18), an existing Behavioral Activation protocol designed for PTSD was adapted to include content explicitly intended to enhance social support. It was further tailored for PCMHI by reducing the number of sessions and time in session (6 45-minute sessions), and offering telephone modality for some sessions.

Results: In this trial, improvement from baseline to post-treatment was significant for PTSD and depression symptoms, social impairment, distrust of others, and use of emotional support to cope ($p < .05$) and was nearly significant ($p < .07$) for feelings of social connectedness, overall social support, emotional support, and tangible support. In qualitative interviews, Veterans reported increases in social ties and incorporating social activity into daily life. 94% of Veterans completed 4 sessions, and 81% of Veterans completed 6 sessions. Moreover, 73% of participants showed clinically significant decreases in PTSD symptoms and 38% no longer met criteria for PTSD after 4-6 sessions.

Conclusions: Brief BA tailored for the PCMHI environment may facilitate an increase in the use and perception of social supports. Future research should investigate modifications to the treatment that could further enhance perceived quality of social connectedness, emotional, and tangible social support, as prior research has shown perceptions of support to be more impactful than objectively measured support. Impacts: The results of the trial presented here demonstrates that BA is effective at increasing social support for this population and may therefore help mitigate a prominent risk factor for poor treatment engagement, treatment non-response, and suicide. Explicitly attending to social support is an important component of PTSD treatment. Future directions include iterative refinement of this social support-enhancing intervention based on stakeholder feedback and multi-site effectiveness research.

3

8:00 AM-9:15 AM

SOCIAL SUPPORT FOR VETERANS' DIABETES SELF-MANAGEMENT: HELPFUL AND UNHELPFUL SUPPORT PERSON BEHAVIORS AND DIFFERENCES BY GENDER

Kristen E. Gray, PhD, MS¹, Erica Ma, BA², Lori Bastian, MD, MPH³, Karin Nelson, MD, MSHS⁴, John Fortney, PhD⁵, Corrine Voils, PhD⁶

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Objectives: Optimal diabetes self-management is complex and often requires patient adoption of many health behaviors. Involvement of support persons (e.g., partners, family, and friends) may be important to the success of self-management, but support person behaviors can also be an impediment. Some evidence also suggests women and men differ in support quantity and quality and in its influence on self-management behaviors. However, little is known about support for diabetes self-management among Veterans and whether there are differences by gender. We sought to fill these gaps using qualitative interviews to capture the richness of Veterans' experiences.

Methods: In 2018, we conducted semi-structured qualitative phone interviews with 36 Veteran VA Puget Sound primary care patients with diabetes (18 men, 18 women). Interviews explored how Veterans managed their diabetes and if and how support persons were involved in their self-management, including helpful and unhelpful/obstructive behaviors. Interviews were audio recorded and transcribed verbatim. We analyzed transcripts using a rapid process by completing templated summaries for each interview and identifying key points, which we then used to synthesize results, including gender comparisons.

Results: Veterans primarily managed their diabetes with medications and dietary changes. Most Veterans had ≥1 social support involved in their self-management, including partners, adult children, and friends. Participating in self-management tasks (e.g., shopping or cooking) and providing direction (e.g., reminders or advice) were the most commonly discussed helpful support person behaviors. Women also described emotional support and role modeling, especially from female friends and family, whereas men spoke of social supports interacting with the health care system. Men often received assistance from female partners or adult children, but women noted managing diabetes primarily on their own and experiencing insufficient support. Women also more often described unhelpful or obstructive behaviors, including nagging and sabotaging (e.g., bringing unhealthy foods into the home).

Conclusions: Most Veterans with diabetes receive self-management support from loved ones. Although much of this support is helpful, Veterans, particularly women, do not always receive adequate support and they experience unhelpful and obstructive behaviors, such as nagging and sabotaging. Diabetes interventions targeting patients alone may be insufficient to optimally modify behaviors, as Veterans' family and friends are commonly involved in self-management. Interventions involving family and friends may be effective but likely require enhancing helpful and reducing obstructive/unhelpful behaviors, especially among women Veterans. Findings are now informing development of a dyadic intervention for Veterans and support persons.

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8:00 AM-9:15 AM

PERCEPTIONS OF SOCIAL SUPPORT WHILE PARTICIPATING IN A WEIGHT LOSS INTERVENTION FOR OVERWEIGHT VETERANS WITH PTSD

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Objectives: Veterans with PTSD are at greater risk of being overweight or obese due to unique barriers to physical activity and healthy eating. MOVE!+UP is a 16-week behavioral weight management program designed to address these weight loss barriers. Because weight management is sensitive to social factors and many with PTSD experience interpersonal relationship challenges, MOVE!+UP emphasizes increasing social support by using a group format, includes a veteran peer support counselor, and provides social support-focused psychoeducation. Although weight loss interventions addressing social support can be effective, little is known about the specific ways in which social support functions to facilitate or hinder health behavior change efforts. The purpose of this qualitative study was to examine Veterans' perceptions of social support while participating in MOVE!+UP and to identify ways in which social support can best be targeted within this and other weight management interventions.

Methods: MOVE!+UP was piloted and refined over the course of five cohorts of veterans (N=44) enrolled in an uncontrolled pilot (2015-2018). Almost all participants (n=37) completed an approximately one-hour semi-structured interview regarding their experience in MOVE!+UP, and how they applied MOVE!+UP education, skills, and support in their daily lives. Template analysis was used to understand social factors relevant to weight management, health behaviors, and mental health.

Results: Participants appreciated many aspects of the group format: cohesiveness around a shared veteran identity with each other and the peer support counselor, learning from others facing similar challenges with PTSD and weight, and generally feeling less alone. However, several participants described disappointment with poor group attendance, lack of contact outside of group, and the presence of those perceived as "complainers." Participants also noted that relationships with non-group members such as spouses and friends could both be helpful and interfere with achieving health goals. Reminders, encouragement, and witnessing others make health behavior changes were welcomed, whereas loved ones encouraging unhealthy food choices and/or PTSD avoidance were deemed unhelpful. Some participants also noted general barriers to accessing, building, and benefiting from social support.

Conclusions: Better understanding challenges faced by those participating in behavioral weight management programs can inform future interventions seeking to capitalize on the potency of social support. The benefits of social support in weight loss programs may be optimized by including members with similar experiences; encouraging consistent, respectful attendance and participation; and delivering education about how to leverage social support from loved ones and others not participating in the program.

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REDUCING THE BURDEN OF EATING DISORDERS: INNOVATIVE METHODS IN EATING DISORDER RESEARCH

Tyler B. Mason, PhD¹, Lindsay Howard, M.S.², Kathryn E. Smith, Ph.D.³, Kristin E. Heron, Ph.D.⁴¹University of Southern California, Los Angeles, CA; ²Virginia Consortium Program in Clinical Psychology, Newport News, VA; ³Sanford Center for Bio-behavioral Research, Fargo, ND; ⁴Old Dominion University, Norfolk, VA

Eating disorders are significant public health problems associated with increased mortality, psychiatric morbidity, and lower quality of life. However, treatment outcomes for eating disorders remain sub-optimal and relapse and shift across various eating disorders is common. Further, many eating disorders go undiagnosed due to failure to seek treatment and stigma associated with eating disorders. Development and use of innovative research methods could lead to new diagnosis and treatment options in eating disorders. The purpose of this symposium is to present a series of studies that use novel assessment and statistical methods in eating disorders research. The first paper will present on the development of a new measure to detect individuals' attempts to underreport disordered eating behaviors. The second paper focuses on examining how novel ecological momentary assessment measures of stress predict disordered eating behaviors and appetite in patients with binge eating disorder. The third paper uses a multistate modeling approach with ecological momentary assessment data to study transitions among four states of body dissatisfaction and preoccupation with thoughts of food in continuous time among women who report binge eating. Together, these presentations will offer new approaches that can be used in future eating disorder research to optimize assessment, diagnosis, and treatment efforts for eating disorders.

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MULTI-STATE MODELING OF BODY DISSATISFACTION AND PRE-OCCUPATION WITH THOUGHTS OF FOOD USING EMA

Tyler B. Mason, PhD¹, Kathryn E. Smith, Ph.D.², Ross Crosby, Ph.D.³, Scott Engel, Ph.D.⁴, Haomiao Jin, PhD⁵¹University of Southern California, Los Angeles, CA; ²Sanford Center for Bio-behavioral Research, Fargo, ND; ³Sanford Health, Fargo, ND; ⁴Sanford Research; ⁵University of Southern California

Body dissatisfaction (BD) and preoccupation with thoughts of food (PTF) are core components of eating disorder pathology and are related to eating disorder severity. Thought-shape fusion refers to a phenomenon in which thoughts of eating forbidden foods leads to perceptions that one has gained weight and BD. Thus, thought-shape fusion suggests that BD and PTF are deeply intertwined, which is relevant given that studies have shown that individuals exhibiting greater thought-shape fusion have higher eating disorder pathology and distress. However, although thought-shape fusion suggests micro-temporal associations between PTF and BD, research has yet to study this phenomenon in daily life including the factors that precipitate states of high PTF and high BD. Ecological momentary assessment data of was collected from 30 women with binge eating for 14 days. A multi-state modeling approach was used to analyze transitions among four states: low BD and low PTF, low BD and high PTF, high BD and low PTF, and high BD and high PTF. Multi-state modeling characterized the processes in which an individual moved through a series of states in continuous time as well as momentary factors that predicted likelihood of transitioning through the four states. Results showed that once women transitioned to states of high BD, it was difficult to transition back to states of low BD. Also, results showed that higher positive affect reduced the likelihood of transitioning from low BD, low PTF to high BD, low PTF. In contrast, negative affect increased the likelihood of transitioning from low BD, low PTF to high BD, low PTF and transitioning from low BD, high PTF, to high BD, high PTF. Binge eating increased the likelihood of transitioning between low BD, high PTF and high BD, low PTF. Restricting food intake and skipping meals were associated with higher likelihood of transitioning from low BD, low PTF to high BD, low PTF and transitioning from high BD, high PTF to high BD, low PTF. Findings highlight states with high BD as particularly harmful, self-perpetuating states. Increasing positive affect, reducing negative affect, and reducing restriction may be important targets to lower BD. In addition, negative affect appears to precipitate thought-shape fusion (high BD, high PTF), while restriction is associated with transitioning from states of thought-shape fusion to states of lowered food preoccupation, which may reflect temporary reassuring effects from restriction. This research will serve to inform ecological momentary interventions for eating disorders.

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8:00 AM-9:15 AM

VALIDATION OF THE UNDERREPORTING OF DISORDERED EATING BEHAVIORS SCALE USING A SIMULATION DESIGN

Lindsay Howard, M.S.¹, Kristin E. Heron, Ph.D.², Carlo Veltri, Ph.D.³¹Virginia Consortium Program in Clinical Psychology, Newport News, VA; ²Old Dominion University, Norfolk, VA; ³Saint Olaf College, Northfield, MN

The purpose of this study was to refine and validate an Underreporting of Disordered Eating Behaviors scale (UDEBS) to detect attempts by respondents to underreport disordered eating behaviors (i.e., unhealthy eating patterns that reflect symptoms of an eating disorder). The scale was originally developed based on a cross-sectional study. The goal of the present study was to further refine and validate this measure. The scale and validity measures were administered to 629 female and 181 male undergraduates using a simulation design, whereby participants were randomized to four conditions and provided coaching about their assigned condition: (1) filling out questionnaires as truthfully as possible, or as if they are trying to hide (2) Binge Eating Disorder (BED), (3) Anorexia Nervosa (AN), or (4) Bulimia Nervosa (BN). A manipulation check was used to ensure compliance to instructions. An ANOVA ran separately by gender revealed that women who were instructed to hide BED, BN, and AN reported significantly higher UDEBS total scores than women instructed to fill out the questionnaire truthfully, but there were no significant differences between the hiding conditions. Although not significant, an item by item analysis for women revealed that women randomized to the honest reporting condition endorsed items in the underreporting direction least frequently followed by hiding BED, hiding BN, and hiding AN. For men, there were no significant differences between any of the conditions, and further research should explore what may be influencing these findings. To enhance the discriminatory power of the scale, two items were removed due to frequent endorsement and small differences between conditions. The final 15-item scale indicated that women who complied with instructions to underreport produced scores that ranged from 1.44 (BED) to 1.70 (AN) times greater than the truthful responding condition on the UDEBS scale. This novel 15-item scale can assist in differentiating individuals who underreport in relation to disordered eating behaviors from those who do not, and may be particularly useful in research contexts where honest reporting is a concern as well as in clinical settings that seek to identify and treat disordered eating.

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8:00 AM-9:15 AM

DYNAMIC STRESS RESPONSES UNDERLYING LOSS OF CONTROL AND OVEREATING IN BINGE EATING DISORDER

Kathryn E. Smith, Ph.D.¹, Tyler B. Mason, Ph.D.², Lisa Anderson, Ph.D.³, Lauren Schaefer, Ph.D.⁴, Scott Engel, Ph.D.⁴, Ross Crosby, Ph.D.⁵, Scott Crow, M.D.³, Carol Peterson, Ph.D.³, Stephen Wonderlich, Ph.D.⁴¹Sanford Center for Bio-behavioral Research, Fargo, ND; ²University of Southern California, Los Angeles, CA; ³University of Minnesota; ⁴Sanford Research; ⁵Sanford Health, Fargo, ND

Stress is a dynamic, multifaceted construct that influences a range of health behaviors, including eating. Consistent with affect regulation theories, ecological momentary assessment (EMA) studies demonstrate binge-eating symptoms (i.e., overeating [OE] and loss of control eating [LOCE]) often occur in response to stress and negative emotions. However, no EMA research has examined momentary affective responses to stressors in binge eating disorder (BED). This study sought to provide a nuanced depiction real-time stress and its impact on OE and LOCE in BED. EMA was used to examine 3 dynamic stress response indices (stress reactivity- the magnitude of increase in negative affect after a stressor; recovery- the extent to which negative affect returns to baseline after a stressor; and pileup- accumulation of stressors and responses in the last 12 hours) as predictors of OE and LOCE among 112 adults with BED prior to treatment. In addition, we explored the moderating effect of BMI and compared the effects of dynamic stress indices with stress intensity and number of stressors measured at single EMA recordings. Results of generalized estimating equations (GEEs) indicated that higher between- and within-person stress reactivity predicted higher LOCE and OE ($p < .001$ to $.004$), and BMI interacted with within-person stress reactivity to predict LOCE ($p = .040$). That is, the relationship between momentary stress reactivity and LOCE was stronger for individuals with lower BMI. BMI interacted with between-person stress recovery to predict OE ($p = .008-.022$), such that better stress recovery was associated with lower OE for individuals with lower BMI. Greater within-person stress pileup predicted higher LOCE and OE ($ps < .001$), and BMI interacted with within-person pileup to predict OE ($p = .007$); the relationship between momentary stress pileup and OE was stronger for individuals with higher BMI. In contrast, stress intensity and number of experienced stressors measured at single EMA recordings did not predict subsequent LOCE or OE. Together these results indicate (1) stress reactivity and pileup are salient momentary antecedents of binge eating; (2) individual differences in stress recovery are related to OE; and (3) BMI differentially influences stress-binge eating associations. Further, the lack of momentary effects using single EMA measures highlights the utility of considering the dynamic and multifaceted nature of stress responses to understand BED symptoms.

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ACCELERATING PALLIATIVE CARE SCIENCE: IDENTIFYING THE CHALLENGES OF PATIENTS, CAREGIVERS, & CLINICIANS VIA MIXED METHODS

Michael Hoerger, PhD, MSCR¹, Brittany Davidson, MD², Claire C. Conley, PhD³, J. Nicholas Dionne-Odom, PhD, RN⁴, Maija Reblin, PhD⁵¹Tulane University, New Orleans, LA; ²Duke University, Durham, NC; ³H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL; ⁴University of Alabama at Birmingham, Birmingham, AL; ⁵Moffitt Cancer Center, Tampa, FL

Palliative care is a rapidly-growing area of healthcare designed to anticipate, prevent, and alleviate the physical and emotional burden of serious illnesses. Meta-analytic evidence demonstrates the benefits of structured palliative care programs, and training programs in medicine, nursing, and social work are increasingly providing training in palliative care. Nonetheless, most of the general public does not know what palliative care is, and many fear it. Accordingly, when an individual is diagnosed with a serious illness, there are fundamental challenges in educating patients and families about palliative care, alleviating fears, and increasing engagement. The presentations included in this symposium use quantitative and qualitative data to shed light on the challenges seriously ill patients, their family caregivers, and clinicians face in the context of the provision of high-quality palliative care services. First, Dr. Davidson reports on a mixed-methods study of women with poor-prognosis ovarian cancer and their family caregivers that provides an in-depth summary of their attitudes and beliefs about care options. Second, using qualitative data from audio-recorded interviews with gynecologic oncology clinicians and patients, Dr. Conley describes patient and clinician barriers to palliative care referrals, especially the lack of patient knowledge about palliative care as a key driver for declining referrals. Next, Dr. Dionne-Odom reports quantitative and qualitative data from three studies to provide a rationale for the development of a multicomponent intervention called CASCADE that is designed to increase the involvement of family caregivers in healthcare decision making for seriously ill patients. Together, the presentations provide key insights into mechanisms that may accelerate improvements in the uptake of palliative care and quality of care provided. They demonstrate the value of behavioral science in this emerging field. Finally, as the discussant, Dr. Reblin will delineate the most significant and innovative elements of each presentation and contextualize this body of work within the broader landscape of research on palliative care. The symposium was organized in collaboration with the Palliative Care SIG-in-formation.

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HIGH RISK PLATINUM OVARIAN CANCER PATIENTS AND THEIR CAREGIVERS: IDENTIFYING NEEDS NEAR THE END OF LIFE

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Background: Women diagnosed with platinum-resistant ovarian cancer generally have a poor prognosis. The stress and cost of medical treatment in the context of this poor prognosis can be a burden to patients and their caregivers, negatively impacting quality of life (QOL). The aim of this study is to understand attitudes and beliefs regarding options for care among women with high-risk platinum-resistant ovarian cancer (defined as prognosis < 6 months) and their caregivers.

Methods: Individual semi-structured qualitative interviews were performed separately for patients and caregivers. Subjects completed a brief survey of standardized measures of hope, anxiety/depression and QOL. Interviews were transcribed and coded using InViVo software.

Results: Twelve patient-caregiver dyads completed surveys and interviews. Patients were most often Caucasian, non-Hispanic (85%) with a median age of 68. Caregivers were most often spouses (54%) with a median age of 56. Both patients and caregivers reported high levels of hope; most caregivers were as hopeful or more hopeful than their patient counterpart (3/13; 23% and 6/13; 46%). Four patients (31%) screened positive for anxiety; 2 of these patients also screened positive for depression. One caregiver screened positive for both anxiety and depression while an additional 3 patients screened positive for depression. Main themes identified during interviewing included: 1. Fear of removing hope 2. Holding back from partner/family 3. Ambiguity regarding knowing when to transition to end of life care

Conclusion: High-risk platinum resistant ovarian cancer patients and their caregivers have complex needs near the end of life. Facilitating communication between patients and their caregivers is critical to the receipt of goal-concordant care as women transition away from cancer-directed therapies.

2

8:00 AM-9:15 AM

PALLIATIVE CARE UPTAKE IN GYNECOLOGIC ONCOLOGY: PATIENT AND PROVIDER PERSPECTIVES

Claire C. Conley, PhD¹, Andrea Buras, MD², McKenzie McIntyre, BS², Robert Wenham, MD³, Susan Vadaparampil, PhD⁴

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Background: Palliative care is a treatment approach focused on improving quality of life and providing symptom relief in the context of a serious illness. Although advanced ovarian cancer (OC) patients experience significant treatment side effects, palliative care is under-utilized. The goal of the present study was to explore facilitators and barriers of (a) palliative care referral among gynecologic oncology providers (MDs) and (b) palliative care uptake among patients with advanced OC.

Methods: Gynecologic oncology providers (N=4) and patients with advanced OC (N=8) completed in-depth, semi-structured qualitative interviews guided by the Social Ecological Model to ensure consideration of relevant patient, provider, and systems level factors. Interviews were audio recorded, transcribed verbatim and analyzed using content analysis.

Results: Providers had received palliative care training during their fellowship, felt comfortable discussing palliative care with patients, and reported discussing palliative care with ≥50% of patients. However, providers reported referring very few patients to specialty palliative care. Provider-reported barriers to referral included patients declining the services, limited availability of palliative care physicians, and a preference for gynecologic oncology providers to manage patients' symptoms. However, none of the patients had heard of palliative care prior to study participation, and none had received specialty palliative care services. Patient-reported barriers to palliative care uptake included patient knowledge, insurance coverage, distance/travel, and time needed to attend the appointment. Although patients were open to the possibility of receiving specialty palliative care, they noted that it would be beneficial to have more information on what palliative care services entail and which are available.

Conclusions: Gynecologic oncology providers are comfortable discussing and providing palliative care. However, patients lack knowledge about palliative care services, and none had seen a palliative care provider. To increase uptake of palliative care in the context of gynecologic oncology, interventions addressing both patient knowledge and gynecologic oncology provider willingness to refer patients may be needed. Results underscore the potential value of a multilevel intervention (e.g., at the patient, provider, and systems levels) to support uptake of specialty palliative care in this population.

3

8:00 AM-9:15 AM

DEVELOPING THE CASCADE INTERVENTION TO TRAIN FAMILY CAREGIVERS IN DECISION PARTNERING WITH PERSONS WITH ADVANCED CANCER USING THE MULTIPHASE OPTIMIZATION STRATEGY

J. Nicholas Dionne-Odom, PhD, RN¹, Andres Azuero, PhD¹, Rachel Wells, PhD, MSN, RN, CNL², Christine M. Rini, PhD³, Kate Guastaferrro, PhD, MPH⁴, Corey Lofton, BSN⁵, Kathryn Louis, MPH⁵, Sally Engler, MPH⁶, Grant Williams, MD⁵, Abby Rosenberg, MD, MS, MA⁷, Rebecca Sudore, MD⁸, Marie Bakitas, DNSc, CRNP¹

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Background: A priority focus in palliative care is preparing the 2.8 million U.S. family caregivers of persons with cancer to effectively support patients in health-related decision-making from diagnosis to end of life.

Purpose: To describe a series of studies leading to the development and piloting of a multicomponent intervention (CASCADE: Care Supporters Coached to be Adept DEcision partners) to train family caregivers to effectively support patients in health-related decision-making.

Methods: We conducted 3 studies informing the CASCADE intervention: Study 1: A qualitative study of surrogate decision-makers who made decisions for individuals at end of life in the intensive care unit. We found that family preparation for decision-making needed to occur much earlier in the illness trajectory. Study 2: A qualitative study of cancer family caregivers where we identified specific informational and emotional support roles families play in supporting patient decision-making. Study 3: A randomized clinical trial of a comprehensive model of early oncology palliative care for family caregivers called ENABLE that included content on becoming better decision partners with patients. As one among many other skills taught within the model, the trial could not tell us which aspects of these decision-partnering components might influence patient and caregiver decision-making outcomes.

Results: Based on these prior studies, we developed CASCADE, an intervention to enhance the decision partnering skills of family caregivers of persons with newly-diagnosed advanced cancer. Using a 2³ (2x2x2) MOST factorial design, our current study will pilot test CASCADE with 40 family caregivers of persons with newly-diagnosed advanced cancer who will be randomized to receive one or more nurse coach-delivered decision partnering training components, based on the Ottawa Decision Support Framework and Social Support Effectiveness Theory: 1) psychoeducation on effective decision partnering principles (1 vs. 3 sessions); 2) decision partnering communication training (yes vs. no); and 3) Ottawa Decision Guide training (yes vs. no).

Conclusions: Once acceptability and feasibility are determined, the CASCADE intervention for family caregivers of persons with advanced cancer will be primed for a fully powered efficacy RCT. Our goal is to develop an optimized package of decision partnering training that can be delivered alone or as part of a more comprehensive early palliative care service model, such as ENABLE.

Symposium 80

8:00 AM-9:15 AM

THE NUTS AND BOLTS OF NIH PEER REVIEW: PUTTING YOUR BEST APPLICATION FORWARD

Weijia Ni, PhD¹, Michael McQuestion, PhD², Elia K. Ortenberg, PhD³, Susan M. Czajkowski, Ph.D.⁴, Sherry Pagoto, PhD⁵¹National Institutes of Health, Bethesda, MD; ²NIH/CSR, Bethesda, MD; ³National Institutes of Health/Center for Scientific Review, McLean, VA; ⁴Division of Cancer Control and Population Sciences, National Cancer Institute, NIH, Bethesda, MD; ⁵University of Connecticut, Storrs, CT

The National Institutes of Health is the largest public funder of biomedical and biobehavioral research in the United States. The mission is to enhance health, lengthen life, and reduce illness and disability. To achieve this mission, the NIH provides support for cutting-edge research and technology development in a variety of fields, ranging from translation of innovative ideas in technology to basic science on major health challenges and disease. There are many types of research and training opportunities and technology development programs that are supported by the NIH across the 24 institutes and centers that provide funding. The majority of grant applications are reviewed by the NIH Center for Scientific Review (CSR). In this symposium, attendees will get 1) an overview of the types of applications submitted to the NIH for support; 2) the basics of the NIH peer review process and criteria and scoring system for evaluating applications, and 3) tips for writing a more successful grant application. Peer review is the cornerstone of the NIH grants process, and an insider's view can lead to a better understanding of how the most meritorious projects are identified that lead to innovative research in the biomedical and biobehavioral sciences.

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8:00 AM-9:15 AM

THE NUTS AND BOLTS OF NIH PEER REVIEW: PUTTING YOUR BEST APPLICATION FORWARD

Weijia Ni, PhD¹¹National Institutes of Health, Bethesda, MD

The majority of peer review is conducted through the NIH Center for Scientific Review (CSR), which works closely with the other 24 funding institutes and centers that ultimately fund projects of high scientific merit and high potential impact. CSR conducts the review of 90% of R01s, 85% of Fellowships, and 95% of Small Business Innovation Research (SBIR) applications as well as many other research and training opportunity activities. The playing field for NIH funding is highly competitive. There are funding mechanisms for early career investigators. Understanding about different application types, who to talk to about your application at different stages of development, finding the right review panel, and learning about the policies and procedures pertaining to review are important steps in preparing an application. In this presentation, learn about the important aspects of the grant submission process and how CSR conducts the review of applications.

2

8:00 AM-9:15 AM

THE REVIEW PROCESS AND THE ROLE OF THE SCIENTIFIC REVIEW OFFICER

Michael McQuestion, PhD¹¹NIH/CSR, Bethesda, MD

Applications reviewed by the NIH Center for Scientific Review go through a process that starts with assignment to a review panel and ends with the generation of a priority score and a written evaluation (Summary Statement). This process is overseen by a Scientific Review Officer, who enlists expert reviewers to evaluate the scientific and technical merit, and the potential contribution and impact of the application to the relevant research field(s). The goal is to ensure that applications are expertly and fairly evaluated in accordance with the NIH policies of rigor, reproducibility, transparency and research integrity. In this presentation, participants will learn about the criteria for review of an application, how reviewers shape their evaluations and the journey of an application as it moves through the review process.

3

8:00 AM-9:15 AM

QUALITIES OF A COMPETITIVE APPLICATION: TIPS FROM THE TRENCHES

Elia K. Ortenberg, PhD¹¹National Institutes of Health/Center for Scientific Review, McLean, VA

Competitive applications submitted to NIH are significant, rigorous, realistic, and well-prepared. Maximizing these qualities when writing and submitting a grant application is a key step to success. From the field, learn some tips shared by applicants and reviewers about what they do and what they look for in a well-written application. Following review of your application, receiving the summary statement can be daunting and discouraging. Learn about the next steps for your application as well as resources and ways to put your best application forward.

Saturday April 4th, 2020 10:30 AM-11:30 AM

D101

10:30 AM-11:30 AM

CAR TRAVEL IS ASSOCIATED WITH A HIGHER DAILY STEP COUNT IN OVERWEIGHT, OLDER ADULTS

Kate Lyden, PhD¹, Tracy Swibas, n/a², Kerry Hildreth, MD², Catherine M. Jankowski, PhD², Wendy M. Kohrt, PhD², Edward L. Melanson, PhD³

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Car dependency and long commuting distances are believed to significantly contribute to the increasingly sedentary lifestyle of US adults. However, in older adults, car travel events may be a positive indicator of functional independence, mobility, and social inclusion. The **purpose** of this study was to investigate differences in daily step count and time spent sitting on days when older adults participate in car travel journeys vs. days when no car travel events occur.

Methods: Healthy, overweight older adults (N=16, F=81%, 67±5y, BMI=31.7±4.2 kg m⁻²) wore the activPALTM activity monitor 24-hours/day for at least 7 consecutive days. Daily car travel events and physical behavior metrics were estimated using the CREA algorithm provided in the PALbatch software (v8.10.9.43). Across all participants each day of wear was categorized by the occurrence (or lack of occurrence) of a car journey. Daily step count and total sitting time were then compared using linear mixed models.

Results: Of the 134 days of valid data, car travel journeys occurred on 103 days. Mean (SD) daily steps on car travel days were significantly greater compared to non-car travel days (6059 (2234) vs. 3729 (2521), respectively). Mean (SD) total sitting time (including during car travel) was not different on car travel days vs. non-car travel days (611 (178) minutes vs. 602 (184) minutes, respectively).

Discussion: Car travel is often perceived as a negative lifestyle behavior associated with increased sedentary behavior and inactivity. In this study of older, overweight adults, we observed the opposite effect - on days when car travel journeys occurred participants took a significantly greater number of steps and sitting time was not different than non-car travel days. These data suggest that, in this population, sitting in a car does not replace otherwise active behavior, but rather replaces other forms of seated behavior (e.g., watching TV) and leads to a greater number of steps taken. Although not tested in the current analysis, increased step count on car travel days may be indicative of different types of stepping bouts performed outside of the home vs. inside the home (e.g., longer duration stepping bouts, higher cadence stepping bouts). Future work should specifically test these hypotheses and compare the current findings in other populations.

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D102

10:30 AM-11:30 AM

EFFECTS OF EXPRESSIVE ARTS-BASED INTERVENTION IN QUALITY OF LIFE AND SOCIAL SUPPORT OF DEPRESSED ELDERLY

Caitlin K.P. Chan, n/a¹, Teresa T.W. Chiu, n/a², Rainbow T.H. Ho, PhD, REAT, BC-DMT, AThR, RSMT/E, CGP, CMA²

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Background: Geriatric depression has long been a prominent issue at global level due to the deteriorating physical health along with aging and its impacts on quality of life. Perceived social support is regarded as a protective factor against unfavorable health conditions among the aging population. Expressive Arts-based (EAB) group intervention emerges as an alternative treatment for geriatric depression because it provides a space for elderly to explore and express their feelings through arts creation, as well as to receive support from others. The present study aimed to explore the potential benefits of such intervention in improving the quality of life and perceived social support of elderly with mild-and-moderate depressive symptoms.

Method: A single group pre-post quasi-experimental design was adopted. One hundred and eighty nine old adults (86.8% Female; Age: M=74.7, SD=8.1) with mild-and-moderate depressive symptoms and without major cognitive impairment, from 27 elderly centers in Hong Kong, were included in this study. They were invited to participate in an 8-week EAB group intervention which was led by trained healthcare professionals in respective elderly centers, with each session lasted for 1.5 hours. Elderly's quality of life and perceived social support were measured before and after group intervention. Dependent t-test was conducted to assess changes in elderly's quality of life, quantity of social support and their satisfaction level towards perceived social support.

Results: The EAB intervention significantly enhanced elderly's overall quality of life ($t(151) = -3.98, p < .00$) and overall satisfaction of their health condition ($t(150) = -3.23, p < .00$), in which significant improvements were observed in the psychological ($t(149) = -2.64, p < .00$) and environmental ($t(150) = -4.87, p < .00$) domains of quality of life. Regarding perceived social support, the average quantity ($t(155) = -3.88, p < .00$) and average satisfaction score ($t(122) = -3.61, p < .00$) of social support increased significantly when compared to baseline.

Conclusion: The preliminary findings suggest EAB group intervention might be an effective intervention for enhancing the quality of life and social support network of elderly with depressive symptoms. The participants found their lives more satisfied, enjoyable and meaningful. They also gained a bigger network and higher satisfaction toward their social support.

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D103

10:30 AM-11:30 AM

FEASIBILITY OF IMPLEMENTING THERAPEUTIC YOGA IN ASSISTED LIVING FACILITIES

Em V. Adams, M.S., CTRS, C-IAYT, RYT¹, Marieke Van Puymbroeck, Ph.D., CTRS, FDRT, RYT-500², Cynthia L. S. Pury, Ph.D.², Arlene A. Schmid, PhD, OTR, FAOTA, RYT-200³

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Background: Yoga interventions have yielded substantial benefits in physical functioning and overall wellbeing for older adults with varied chronic illnesses.¹ Common positive outcomes of yoga interventions are also commonly sought outcomes for long-term care (LTC) residents including improved balance, increased functional fitness, and effective pain management.²⁻⁷ However, many studies are aimed at specific health conditions, and evidence on the feasibility of a yoga intervention for residents of LTC with wide-ranging health conditions is sparse. Therefore, the purpose of this study was to evaluate the acceptability of a therapeutic yoga intervention on the physical functioning and perceived physical functioning of assisted living residents.

Methods: This was a convergent mixed method intervention study, consisting of an eight-week seated yoga program, led by a Certified Yoga Therapist twice a week for 50 minutes each session. Participants were recruited from four assisted living facilities in the southeast. To be included participants were: willing to attend yoga class twice a week for eight-weeks; have no contraindications for exercise, and have no known diagnosis of dementia. Residents were excluded if they were: currently enrolled in another study; planned to leave the facility in the next 10-weeks, or required ventilator assistance to breathe. Quantitative measures, (the Function in Sitting Test (FIST),⁸ the Arm Curl Test (ACT),⁹ Back Scratch test (BST),⁹ Sit and Reach test (SR),⁹ and Pain Interference and Engagement (PEG) scale,¹⁰ were collected at baseline (T1) and post-intervention (T2). Additionally, focus groups were conducted after the completion of each intervention. Treatment fidelity was observed either in person or through video observations of the intervention and was documented on a fidelity checklist.

Results: A total of 15 participants completed the study. Paired t-tests revealed significant improvements in upper body strength as measured by the ACT ($t(14)=-4.811, p=.000$), and lower body strength as measured by the sit and reach test ($t(14)=-2.799, p=.014$). A Wilcoxon's signed-rank revealed a significant difference for the FIST ($Z=-2.945, p=.003$) indicating improved seated balance, and for the BST ($Z=-2.227, p=.026$), indicating increased upper body flexibility. There was no significant difference in self-reported pain interference. Three themes resulted from content analysis of the focus groups were: a) improved functional ability; b) improved activity participation; and c) increased relaxation.

Discussion: Seated yoga was acceptable and promising for improving overall functional fitness. During focus groups, residents reported high acceptability, indicating they perceived improved functional fitness. Future research is recommended that has an active treatment comparison group and that is inclusive of people with known dementia.

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D104

10:30 AM-11:30 AM

THE EFFECT OF A PHYSICAL ACTIVITY INTERVENTION ON PHYSICAL FUNCTION IN OLDER AFRICAN AMERICAN ADULTS

Leah A. Carter, M.Ed¹, Robbie Beyl, PhD¹, William Johnson, PhD¹, Melissa N. Harris, CCRP¹, Callie Hebert, M.S¹, Owen Carmichael, PhD¹, Robert L. Newton, PhD¹

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Introduction: Assessment of physical function is important due to its association with overall health and quality of life in older adults. Studies have also shown associations in physical activity correlating with greater independence in old age, however, outcomes in physical function due to increased physical activity among older African American adults remain. The primary objective of this analysis is to determine the effects of a physical activity intervention in older African American adults on physical function.

Methods: We recruited 56 African Americans (AA) aged 65 to 85 into the 12-week Program for African American Cognition and Exercise (PAACE) study. Participants were randomized into either a physical activity program (PAP), or a successful aging health education program (SAP). Participants in the SAP attended twelve 30-60 minute group sessions conducted at an academic institution. Participants in the PAP attended two supervised group physical activity sessions per week led by research staff at a local YMCA. The PAP, informed by older AA Adults through focus groups conducted prior to designing the intervention, was comprised of aerobic and strength training exercises. PAP Participants were instructed to engage in 2-3 additional days of physical activity at home. Physical function was assessed at baseline and follow up using hand grip strength, 2-minute walk test, and the Short Physical Performance Battery (SPPB) which includes walking speed, a balance test, and repeated chair sit to stand test, with the sum of the three individual categorical scores yielding the final SPPB score [range points: 0 (worst) to 12 (best)].

Results: Participants had a mean age of 69.2 (3.4), were 73.2% female, and the mean BMI was 32.5 (6.1). Total SPPB scores at baseline were 10.6 (0.28) and 10.7 (0.28) for PAP and SAP, respectively. Participants in PAP had significant ($p = 0.034$) increases in SPPB chair sit to stand scores at follow-up compared to those in SAP. Dominant and non-dominant handgrip strength decreased at follow-up in PAP (p values < 0.004) and SAP (p values < 0.019), but there were no between group differences in change. There were no between group differences in the SPPB balance, walk, or total scores (p values > 0.245).

Conclusions: Older African American adults randomized to a 12 week physical activity intervention improved standing performance. However, these individuals also showed a decrease in hand grip strength. There were no other changes in physical performance scores, likely because of ceiling effects.

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D105

10:30 AM–11:30 AM

THE CHEMO-GUT STUDY: METHODOLOGICAL CHALLENGES AND PRELIMINARY FINDINGS

Julie M. Deleemans, MSc.¹, Faye Chleilat, M.Sc., B.Sc.², Mohamad Baydoun, PhD³, Katherine-Ann L. Pedalue, BA⁴, Andrew McLennan, B.A. Psychology², Jan-Willem Henning, MBChB, FRCPC¹, Raylene A. Reimer, PhD, RD², Linda E. Carlson, PhD²

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Background: Cancer among young adults has risen 38% in recent decades. Chemotherapy adversely affects the gut microbiome, inducing acute dysbiosis, and altering physiological, psychological and cognitive function. The gut microbiome is an important modulator of immune, metabolic, psychological and cognitive mechanisms. Therefore, understanding chemotherapy's long-term effects on gut microbiota and psycho-physiological outcomes is crucial to improve survivors' physical and mental health, but remains unexamined.

Methods: This longitudinal study investigates chemotherapy induced gut dysbiosis, and associations between gut microbiota, and immune, anthropomorphic, cognitive and psychological outcomes using data collected at 3 time points in the first 6 months post-chemotherapy. Participants are stage I – IV, 18–39 year old blood or solid tumor, except CNS and colorectal, cancer patients (N >50), and a healthy sibling, friend, or partner as control (N >50). Measures include: fecal gut microbiota composition using 16s RNA sequencing; Psychological and cognitive patient reported outcomes for depression, anxiety, PTSD, pain, fatigue, and social and cognitive function; Dual-energy X-ray Absorptiometry for fat and lean mass, and bone mineral concentration; Serotonin, Brain Derived Neurotrophic Factor (BDNF), cytokines (IL-6, IL-1b, TNF-a, IL-10), and C-reactive protein from serum; and long-term cortisol from hair samples.

Results: In consideration of recruitment challenges, the study protocol was modified to be more pragmatic by being more inclusive of patients within 6 months post-chemotherapy, and metastatic patients who are stable. To date, 12 patients have been contacted and 6 have been screened. Of the patients screened, the mean age is 32.67 years, and 80% are male. Diagnoses include sarcoma (n=1), hematological (n=4), and gastrointestinal (n=1) cancers. Gut-related symptoms reported after chemotherapy include heartburn, loose stool, constipation, irregular bowel movements, abdominal pain, c-difficile infection, and *helicobacter Pylori* infection lasting more than 1 year after chemotherapy has ended.

Implications: In this ongoing study, methodological changes were made to enhance recruitment feasibility. Survivors' screened report persistent post-chemotherapy gastrointestinal issues which may suggest ongoing dysbiosis of the gut microbiome that require further exploration. Understanding what bacterial species are depleted after chemotherapy, how long these effects last, and potential bio-behavioural mechanisms that drive psychological and cognitive issues among survivors will allow for targeted, integrative interventions to be developed.

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D106

10:30 AM–11:30 AM

THE ROLE OF FATIGUE AND MOOD IN PERCEIVED COGNITIVE IMPAIRMENT AMONG BREAST CANCER SURVIVORS

Julie Kircher, MA¹, Emily Janio, MPH¹, Michael A. Hoyt, Ph.D.¹, Dara Sorkin, PhD¹

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Nearly 75% of breast cancer survivors experience cognitive impairment or “chemobrain” either during or following chemotherapy. Chemobrain can include both patient-reported and objectively-assessed difficulties with attention, memory, and mental slowness. Prior research on objectively-assessed cognition demonstrates a weak relationship with psychosocial factors but there is some evidence for a link with patient-reported cognition; though the influence of behavioral symptoms such as persistent fatigue, distress, and depressive symptoms remain unclear. The purpose of the present study was to examine how physical and psychosocial factors relate to patient-reported cognitive problems over 12-weeks in a diverse sample of breast cancer survivors participating in a weight loss and health behavior intervention. It was hypothesized that greater levels of fatigue and negative affect would predict higher patient-reported cognitive problems over time.

The data came from the “Mi Vida, Mi Salud” intervention study, which aimed to reduce symptom burden for Latina and non-Latina breast cancer survivors. Psychosocial and physiological measures were gathered at baseline and a 12-week follow-up from 48 women (24 Latina, 24 White). Hierarchical linear regression was performed to predict perceived cognitive impairment. Ethnicity, intervention group status, body mass index (BMI) and chemotherapy receipt (yes/no), were included as covariates. Baseline levels of fatigue, negative affect, and BMI accounted for 15% of the variance in perceived cognitive impairment. The final model [$F(3, 28) = 7.15, p = .001, \Delta R^2 = .10$] revealed that only change in fatigue [$\beta = .43, t(38) = 4.11, p < .001$], and not negative affect, significantly predicted patient-reported cognitive impairment. Results reveal that both physical and emotional factors may worsen patient-reported cognitive impairment. A better understanding of the role behavioral indicators have on patient-reported cognition can help to inform health-care providers in ways to address and reduce cognitive complaints.

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D107

10:30 AM–11:30 AM

SOCIAL NEEDS AND HEALTH-RELATED QUALITY OF LIFE AMONG AFRICAN AMERICAN CANCER SURVIVORS

Theresa A. Hastert, PhD, MPP¹, Jean A. McDougall, PhD², Jennifer L. Beebe-Dimmer, PhD, MPH¹, Stephanie Pandolfi, PhD¹, Ann G. Schwartz, PhD, MPH¹

¹Wayne State University School of Medicine/Karmanos Cancer Institute, Detroit, MI; ²University of New Mexico School of Medicine, Albuquerque, NM

Background: Social needs may impact cancer survivors' health-related quality of life (HRQOL) above and beyond sociodemographic characteristics and cancer-related factors. The purpose of this study is to estimate differences in HRQOL based on African American survivors' experiences of social needs related to housing, utilities, transportation, and safety.

Methods: Results include survey data from 849 African American cancer survivors who participated in the Detroit Research on Cancer Survivors (ROCS) survivorship cohort, a population-based study of African American survivors of breast, colorectal, lung, and prostate cancer in Metropolitan Detroit. Social needs include survivor self-report of a utility company shutting off service in the past 12 months, worry that they may not have stable housing in the next 2 months, going without healthcare because of lack of transportation in the past year, and not feeling safe in their neighborhood. HRQOL is measured using the validated Functional Assessment of Cancer Therapy – General (FACT-G). FACT-G score differences of 3–5 points represent clinically meaningful differences in HRQOL. Linear regression models control for demographic (age, sex, education, income) and cancer-related factors (site, stage, treatments received, treatment status) as well as cancer-related financial hardship.

Results: Mean age was 60.3 years at the time of ROCS participation. Half (49.5%) of survivors were women, one-third (33%) reported incomes < \$20,000 per year, and 63% reported education beyond high school. Worry about stable housing was the most common social need (13%) followed by missing care because of transportation (10%), not feeling safe in their neighborhood (10%), and experiencing a utility shutoff (9%). Compared to those without the social need, FACT-G scores were 6.2 (95% CI: 1.0, 11.4) points lower for those who experienced utility shut-offs, 10.4 (95% CI: 5.9, 15.0) points lower for those who feared unstable housing, 12.1 (95% CI: 7.1, 17.2) points lower for those who went without healthcare due to lack of transportation, and 10.4 (95% CI: 5.7, 15.0) points lower for those generally did not feel safe in their neighborhood in fully adjusted models.

Conclusions: Among African American cancer survivors, social needs related to housing, utilities, transportation, and safety are all associated with clinically meaningful differences in HRQOL after accounting for demographic, socioeconomic, and cancer-related factors.

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D108

10:30 AM–11:30 AM

TRACKER WEAR AND PHYSICAL ACTIVITY MONITORING IN AN MHEALTH INTERVENTION FOR SURVIVORS OF ADOLESCENT AND YOUNG ADULT CANCER

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Background: Most adolescent and young adult (AYA) cancer survivors do not meet national guidelines of 150 minutes of moderate-to-vigorous physical activity (MVPA) per week. Little is known about how AYAs utilize activity trackers and how tracker use relates to MVPA. This study describes adherence to tracker wear, trajectories of tracker-measured active minutes (AM), and goal attainment in THRIVE, a pilot RCT of a 3-month mHealth physical activity intervention for AYAs.

Methods: Intervention participants included in this analysis (n=30, 76% female, 76% white, 30.2 + 5.0 years and 4.0 + 2.8 years postdiagnosis) received a Fitbit with companion app, individual videochat session, 12 weekly emailed lessons with tailored feedback, and access to a Facebook group. AYAs were encouraged to track their physical activity daily and given weekly AM goals progressing to 150 MVPA minutes. Daily tracker wear and AM were assessed using Fitbits. Adherence to tracker wear included all days with >1000 steps and was dichotomized as high (5 ≥ days/week) vs low (< 5 days/week) as the reference group. Descriptive statistics were conducted for tracker wear, AM, and goal attainment, reported as mean (SE). A linear mixed model with subject level random intercepts regressed AM per week onto tracker wear.

Results: Over the 3-month intervention period, on average AYAs wore their tracker 61 of 84 intervention days (SE=18.4, 72%), with a mean of 5.08 days (SE=1.53) per week. Adherence to tracker wear peaked in week 4 with a mean of 6.40 days (SE=1.35) and declined to 4.17 days (SE=2.72) in week 12. AYAs averaged 107.89 (SE=109.29) AM/week, peaking in week 2 with 142.97 AM/week (SE=169.16) before declining to 82.70 (SE=120.95) in week 10. The proportion of participants meeting goals was highest in weeks 1 and 2 (60%) and lowest in week 10 (17%). Compared to low tracker wear, high wear was associated with an expected increase of 92.15 AM/week (SE=37.07, p=.012).

Conclusions: Tracker wear was high in this sample of AYAs and was associated with increased physical activity. Further research is needed to examine long-term use of activity trackers in physical activity interventions and identify strategies associated with increased physical activity in AYAs.

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D109

10:30 AM–11:30 AM

STRATEGIES TO RECRUIT YOUNG ADULT CANCER SURVIVORS TO DIGITAL BEHAVIORAL HEALTH INTERVENTIONS: WHAT MESSAGES AND CHANNELS WORK

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Background: Young adult cancer survivors (YACS) have few age-appropriate resources to meet their unique behavioral health needs. Research is emerging to address this gap, yet engaging YACS in behavioral intervention research remains challenging. This study tested a subset of recruitment messages and channels implemented in the Improving Physical Activity after Cancer Treatment (IMPACT) study, a 12-month RCT of a mobile health intervention, to identify effective approaches to enroll YACS in intervention research.

Methods: We developed two recruitment messages incorporating intrinsic or extrinsic motivational framing and distributed advertisements through direct mail and paid social media (Facebook and Instagram) campaigns. Individuals from the UNC Tumor Registry were randomized to receive one of the ads via direct mail. Social media ads targeted adults 18 or older with interests in cancer-related topics. All ads provided a unique URL to the study website and were used to track screening survey access. Chi-square analyses and logistic regression were used to test the main and interaction effects of message (intrinsic vs. extrinsic) and channel (direct mail vs. paid social media) on the number of screening surveys initiated and YACS enrolled in IMPACT.

Results: During October and November of 2018, 1830 mailings were distributed: 944 (51.6%) intrinsic and 886 (48.4%) extrinsic. Of the intrinsic mailings, 130 screening surveys were initiated (13.8%), and 61 YACS enrolled in the study (6.5%). Of the extrinsic mailings, 105 surveys were initiated (11.9%) and 54 enrolled (6.1%). Two five-day social media campaigns were launched during March and April of 2019, yielding 931 unique link clicks, 469 (50.4%) in response to an intrinsic ad, and 462 (49.6%) in response to an extrinsic ad. Exposure to the intrinsic ad led to 13 initiated screening surveys (2.7%) and 3 YACS enrolled in the study (0.7%), while exposure to the extrinsic ad led to 18 initiated surveys (3.9%) and 5 YACS enrolled (1.1%). There was a significant main effect of channel; direct mail led to more surveys initiated ($p < 0.001$) and YACS enrolled ($p < 0.001$) than social media. Message type did not significantly impact screening and enrollment, and there was no significant interaction between message and channel.

Conclusions: Mailings yielded a higher number of YACS screening and enrolling in IMPACT than paid social media ads. Intrinsic and extrinsic appeals did not differ for recruitment outcomes, suggesting that either message type can attract YACS to intervention trials.

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D110

10:30 AM–11:30 AM

SLEEPLESS IN SURVIVORSHIP: EXPLORING THE RELATIONSHIP BETWEEN SLEEP DISTURBANCE AND FEAR OF RECURRENCE IN LYMPHOMA SURVIVORS

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Background: Sleep disruption is a common and debilitating concern for survivors of hematologic cancers. During the post-treatment transition period, many lymphoma survivors experience distress and significant impairments in quality of life; yet, little research has examined sleep behavior during this time. Addressing poor sleep is essential to improve the health of this population already at elevated risk for persistent fatigue, co-morbid illness, and emotional disturbances. Lymphoma survivors also struggle with fear of cancer recurrence (FOR), which could negatively impact their sleep. However, little is known about the link between FOR and sleep among lymphoma survivors soon after treatment ends. To explicate these associations, we examined the relationship between sleep, FOR, and distress in lymphoma survivors who recently completed treatment.

Methods: A baseline survey was administered during a pilot RCT to 30 lymphoma survivors within 2 years of treatment completion. Survey items assessed sleep quantity and quality (Pittsburgh Sleep Quality Index), sleep disruption (Fatigue Symptom Inventory), FOR (Assessment of Survivor Concerns), anxiety (GAD-7), and perceived psychological distress (Visual Analog Scale). Descriptive statistics and zero order correlations ($\alpha=.05$) were computed for demographic and main study variables.

Results: Lymphoma survivors (mean age=53.1, 90% non-Hispanic white, 50% female) reported spending on average 8.1 hours in bed but only getting 6.5 hours of sleep. Most (93.3%) of the sample endorsed some degree of sleep disruption, while 33.3% rated their sleep quality as “fairly bad” or “very bad.” FOR was very common (96.7%), with one-third (36.7%) of the sample reporting they worry “very much” about cancer-related concerns. Total sleep was negatively correlated with FOR ($R=-.50$, $p<.01$) and anxiety ($R=-.41$, $p=.03$). Poorer sleep quality was associated with higher FOR ($R=.37$, $p=.05$), anxiety ($R=.45$, $p=.01$), and psychological distress ($R=.44$, $p=.02$). Similarly, higher sleep disruption was correlated with higher FOR ($R=.55$, $p<.01$), anxiety ($R=.47$, $p=.01$), and psychological distress ($R=.43$, $p=.02$).

Conclusion: Sleep disturbances are common and associated with FOR and psychological distress among lymphoma survivors transitioning off treatment. Future interventions to improve sleep in lymphoma survivors may consider targeting fear of recurrence to reduce distress.

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D111

10:30 AM–11:30 AM

ATTITUDES AND KNOWLEDGE TOWARDS LUNG CANCER SCREENING AMONG PRIMARY CARE CLINICIANS IN NEW JERSEY: A QUALITATIVE STUDY

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Introduction: The efficacy of lung cancer screening with annual low-dose computed tomography (LDCT) to increase the early detection and subsequent survival of lung cancer has been demonstrated by the National Lung Screening Trials. Unfortunately, utilization of LDCT remains suboptimal. Primary care clinician attitudes toward and knowledge of LDCT may influence patient use of LDCT. This study seeks to assess and understand the attitudes towards and knowledge of LDCT for lung cancer screening among primary care clinicians.

Methods: Semi-structured phone interviews were conducted with 30 primary care clinicians (family medicine and internal medicine) from federally qualified health centers, community, and academic primary care practice settings throughout New Jersey. Interviews were audio-taped and transcribed verbatim. Qualitative data were analyzed using content analytic procedures.

Results: Gaps in clinician knowledge of LDCT were related to the upper age limit for screening and smoking history eligibility, along with reimbursement. Nearly all clinicians felt the benefits of LDCT outweighed the risks. The primary perceived benefit of LDCT was the early detection of lung cancer. The perceived risks were radiation exposure and false positives that require invasive follow-up procedures. Clinicians expressed low clinician awareness of LDCT and low LDCT recommendation as the primary barriers to patient uptake of LDCT within New Jersey and nationwide. Additional barriers included lack of patient knowledge of LDCT, cost/insurance, fear of test results, and lack of motivation to undergo LDCT.

Conclusions: Clinicians viewed the early detection of lung cancer as the primary benefit of LDCT. Clinicians' lack of awareness and knowledge of LDCT were the key barriers to LDCT screening rates locally and nationally. Gaps in knowledge and positive attitudes towards LDCT indicate a wish for clinician education to aid in shared-decision making encounters and positively impact patient uptake of LDCT.

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D112

10:30 AM–11:30 AM

UNDERSTANDING PARTICIPATION IN A COMMUNITY-BASED PHYSICAL ACTIVITY PROGRAM FOR BREAST CANCER SURVIVORS

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Background: Physical activity (PA) improves health-, and fitness-related outcomes in breast cancer survivors (BCS), yet few BCS are meeting PA guidelines. Community-based PA programs have the potential to increase PA behavior, but more theoretically grounded programs are needed to understand PA participation in cancer survivors. Few studies have examined motivational outcomes using the Self-Determination Theory (SDT) in a community-based setting. Therefore, understanding PA participation of BCS in a community-based setting is needed.

Purpose: To examine the associations between participation in Curves™ and motivational regulations using the SDT in BCS.

Methods: 66 post-treatment BCS were recruited from a breast clinic in Montreal, Canada and provided with a free, 1-year membership to Curves™. The Curves™ program is a women-only circuit training facility with numerous locations across North America. It includes a full body, 30-minute circuit fitness program using aerobic and resistance machines targeting strength and aerobic fitness. At the end of the membership period, BCS were administered a self-report questionnaire assessing intrinsic, external, introjected, and identified regulation using the Behavioral Regulation in Exercise Questionnaire; and a modified version of the Godin Leisure-Time Exercise Questionnaire to measure PA. Participation in Curves™ was measured by indicating the frequency of participation (i.e., 1=I didn't attend to 4=I attended as much as I could). A hierarchical linear regression was conducted to examine the association between exercise motivation and participation in Curves™.

Results: BCS were a mean age of 58.7±10.5, primarily Stage II, had a mean BMI of 28.3±6.5 kg/m², and were 58.7±39.1 months since diagnosis. Overall, 54 BCS attended Curves™ with 55.4% attending at least 2–3 days/wk and 52.3% BCS were meeting PA guidelines (150min/wk). Intrinsic regulation significantly predicted higher participation in Curves™ ($\beta=.37$; $p=.013$). No significant associations were found for external, introjected, and identified regulation and participation.

Conclusion: BCS who are intrinsically motivated are more likely to attend Curves™. Community-based PA programs provide accessible programming for cancer survivors to engage in PA. Future studies should better understand what motivates cancer survivors to be active in community-based PA programs.

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D113

10:30 AM–11:30 AM

TOWARD A THEORETICAL UNDERSTANDING OF YOUNG FEMALE CANCER SURVIVORS' DECISION-MAKING ABOUT FAMILY-BUILDING POST-TREATMENT

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Purpose: The importance of fertility and fertility preservation among young cancer survivors is well known. Irrespective of whether young women preserve fertility, however, family-building after cancer may be challenging. Due to gonadotoxic treatment effects, family-building often requires in vitro fertilization, surrogacy, or adoption, with associated challenges such as uncertain likelihood of success, high costs, and complicated laws regulating surrogacy and adoption. This study examined adolescent and young adult female (AYA-F) survivors' experiences and decision-making related to family-building after cancer.

Methods: Semi-structured interviews explored fertility and family-building themes (N=25). Based on an a priori conceptual model, hypothesis coding and grounded theory coding methods guided qualitative analysis.

Results: Participants averaged 29 years old (SD=6.2); were mostly White and educated. Four major themes were identified: Sources of Uncertainty, Cognitive and Emotional Reactions, Coping Behaviors, and Decision-making. Uncertainty stemmed from medical, personal, social, and financial factors, which led to cognitive, emotional, and behavioral reactions to reduce distress, renegotiate identity, adjust expectations, and consider 'next steps' toward family-building goals. Most AYA-Fs were unaware of their fertility status, felt uninformed about family-building options, and worried about expected challenges. Despite feeling that "action" was needed, many were stalled in decision-making to evaluate fertility or address information needs; postponement and avoidance were common. Many AYA-Fs indicated a desire for information and care in response to uncertainty and feared challenges, while simultaneously voicing reluctance to pursue such resources to meet their needs. Younger AYA-Fs tended to be less concerned and assumed fertility problems would be treatable in the future.

Conclusion: AYA-Fs reported considerable uncertainty, distress, and unmet needs surrounding family-building decisions post-treatment. Support services are needed to better educate patients and provide opportunity for early referral to address potential future challenges. Reproductive counseling should occur throughout survivorship care to address medical, psychosocial, and financial difficulties and to allow time for informed decision-making and the opportunity to prepare for barriers such as high costs.

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D114

10:30 AM–11:30 AM

AN EXAMINATION OF CAUSAL ATTRIBUTIONS OF CANCER FROM A POPULATION HEALTH ASSESSMENT

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Background: Causal attributions of cancer have the potential to increase preventive strategies to reduce cancer risks. Yet, less is known about factors associated with beliefs about cancer causation.

Purpose: The purpose of this study is to determine factors associated with causal attributions of cancer among adults within the Virginia Commonwealth University Massey Cancer Center catchment area.

Methods: Data were obtained from a cross-sectional survey of 559 respondents of the Together for Health – Virginia Study, a population-based sample of adults. Individual-level factors including demographic (age, gender, race/ethnicity, rural identity) and socioeconomic (education, income) characteristics were assessed, as well as lifestyle (tobacco use, body mass index), medical history (family or personal history of cancer), delay discounting, and individuals' attitudes towards alternative therapies. Attitudes towards cancer were measured by eight items reported on a 4-point Likert scale (strongly agree to strongly disagree). The first four items reflected participants' agreement on the following as causes of cancer: behavior, tobacco, obesity, and HPV. The other four items included statements that reflected fatalism about cancer. Structural equation models were run separately for each type of belief modeled as a latent dependent variable.

Results: Respondents were 55.6 years (SD=15.8) on average, 72.6% White, 51.6% female, and 38.3% self-reported rural identity. Fatalistic beliefs about cancer was associated with rural identity ($\beta=0.1$, $p=0.02$) and believing in alternative therapies as a primary cancer treatment ($\beta=0.1$, $p=0.03$) while older age ($\beta=-0.3$, $p<0.01$), higher levels of education attainment ($\beta=-0.2$, $p<0.01$), and having a personal history of cancer ($\beta=-0.2$, $p<0.01$) were significantly associated with lower fatalism. Stronger beliefs in concrete causes of cancer were associated with higher educational attainment ($\beta=0.2$, $p<0.01$) and income levels ($\beta=0.2$, $p=0.01$). These beliefs were lower among Black respondents ($\beta=-0.2$, $p=0.02$).

Conclusions: This study provides evidence for the relationship between causal attributions of cancer and individual factors, emphasizing the role that culture may play. Future implementation research is needed to culturally adapt prevention efforts and cancer awareness messaging and campaigns using causal attributions of cancer.

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D115

10:30 AM-11:30 AM

ASSOCIATIONS BETWEEN PRE-OPERATIVE EXERCISE FREQUENCY AND SUBSEQUENT SYMPTOMS AND ACTIVITY BEHAVIOR AFTER CANCER SURGERY

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Background: Abdominal cancer surgery involves high postoperative risks, but perioperative physical activity may reduce these risks and facilitate recovery. The purpose of this study was to examine associations between preoperative self-reported exercise frequency and daily symptom and activity behavior patterns during a pilot mobile intervention that prompts participants to walk after prolonged sedentary behavior.

Methods: Fourteen patients aged 25-65 ($M = 49$; 79% female) scheduled for surgical treatment of metastatic peritoneal or colorectal cancer participated in an intervention to reduce sedentary behavior before and after surgery. Starting at least two weeks before surgery through 30 days post-discharge, patients wore a Fitbit smartwatch, rated symptom severity daily on a 0-10 scale, and received prompts to walk after prolonged periods of sedentary behavior. A questionnaire was completed at the start of the study assessment period that asked patients about weekly exercise frequency prior to enrollment. Independent t-tests examined differences in self-reported symptom severity and activity behavior during the perioperative period in patients that reported exercising less than three times per week ($N = 9$) and three or more times per week ($N = 5$).

Results: Participants endorsing more frequent exercise prior to study enrollment reported significantly less severe fatigue ($M = 3.5$ vs $M = 7.1$, $t(7) = 3.96$, $p = .005$) and nausea ($M = 1.2$ vs $M = 5.4$, $t(7) = 3.72$, $p = .007$) during inpatient recovery and less severe nausea post-discharge ($M = 0.6$ vs $M = 2.6$, $t(10) = 2.44$, $p = .035$). The self-report data on frequency of preoperative exercise was also associated with higher Fitbit step counts during inpatient ($M = 2414$ vs $M = 586$, $t(8) = -2.702$, $p = .027$) and post-discharge recovery ($M = 2824$ vs $M = 1122$, $t(11) = -3.349$, $p = .006$) as well as with shorter sedentary bouts ($M = 52.2$ vs $M = 97.7$ minutes, $t(11) = 3.143$, $p = .009$) and longer active bouts post-discharge ($M = 2.0$ vs $M = 1.4$ minutes, $t(11) = -2.520$, $p = .028$).

Conclusion: In the context of a mobile technology-supported sedentary behavior intervention, individuals reporting more frequent exercise prior to cancer surgery showed less severe postoperative symptoms (fatigue and nausea) and more postoperative physical activity (more steps taken, shorter sedentary bouts, and longer active bouts). Although based on a small pilot sample and unadjusted for age or comorbidity, these findings suggest that preoperative physical activity may facilitate recovery from abdominal cancer surgery. An ongoing randomized trial will evaluate the effects of the sedentary behavior intervention on clinical outcomes after surgery.

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D116

10:30 AM-11:30 AM

UNDERSTANDING PATIENT LEVEL FACTORS THAT INFLUENCE COLORECTAL CANCER SCREENING AMONG LATINXS

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Background: Colorectal cancer (CRC) is highly preventable, and lower rates of CRC screening are evident in Latinxs compared to other ethnic/racial groups. Lack of education as well as cultural beliefs and myths have been associated with low CRC screening in Latinxs. The goal of this study was to understand patient level factors that influence CRC screening among Latinxs who have not been screened for CRC.

Methods: Participants were recruited in waiting rooms from a federally qualified health center (FQHC) in the Mexico-US border. Individual interviews ($n=9$ men; $n=11$ women) were conducted in Spanish with participants age 50+ years who had not had CRC or completed CRC screening (FOBT or colonoscopy) in the past. Interviews were audio-recorded, transcribed, and coded by research staff in Spanish. Data were analyzed using a rapid qualitative approach and guided by an adapted Health Belief Model (HBM) including individual perceptions, modifying factors, and likelihood of action. Codes were discussed collectively, and a matrix was created to consolidate quotes and themes that fit into the adapted HBM.

Results: Mean age of participants was 63.35 (9.30) years, and 70% achieved elementary school or less education. Four primary themes influencing CRC screening were identified: 1) lack of knowledge about CRC and screening, 2) fatalism (e.g., believing health is in the hands of God), 3) misinformation about causes of CRC, and 4) beliefs about masculinity (e.g., *machismo*). These themes fit into the HBM constructs of perceived susceptibility, perceived barriers to preventative action, and socio-psychological variables.

Conclusion: Lack of knowledge of CRC, cultural beliefs, and gender norms are barriers to CRC screening among Latinxs. These findings suggest that culturally tailored educational messages and strategies are needed to increase CRC knowledge among Latinxs living in the US-Mexico border.

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D117

10:30 AM-11:30 AM

AN ANALYSIS OF GHANAIAI STUDENTS' PERCEPTIONS OF THE HPV VACCINE AND CANCER PREVENTION

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Introduction: Evidence shows an inverse relationship between an increase in the Human Papillomavirus (HPV) vaccination uptake and the prevalence of HPV related cancer. However, HPV vaccination rates in Ghana are low. Studies that examine Ghanaian adolescents' perceptions about HPV vaccination are limited. The purpose of this study was to assess the knowledge and attitudes of HPV vaccination of Ghanaian students.

Methods: We conducted four, thirty-minute focus group discussions with Ghanaian students. Sixteen open-ended questions were introduced to facilitate the focus group discussion among participants. The discussions were audio-recorded and transcribed verbatim.

Results: The sample (n=59) included junior high school students (n=30) and senior high school students (n=29). The participants consisted of females (n=50) and males (n=9) between the ages of 13 and 17 years. Our findings showed that sexuality education and HPV related topics are rarely taught in schools leaving students with a limited understanding of general preventive care and a lack of knowledge about the HPV vaccine. Due to limited resources, not all the hospitals in Ghana have centers where patients can get vaccinated. Additionally, sociocultural factors such as religion and the stigma associated with HPV hinder people from having open conversations about HPV vaccination behavior. Finally, we found that Ghanaian students have restricted access to affordable primary care practices and there are no standard routine medical checkups, therefore adolescents and their parents have limited outlets to discuss HPV vaccination with their providers.

Conclusion: The findings of our study demonstrate the need for more educational programs in Ghana that emphasize the importance of the HPV vaccine. Future HPV vaccination educational programs should equip students with the knowledge and resources needed to understand the importance of preventive care and overcome HPV vaccination related stigma.

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D118

10:30 AM-11:30 AM

CHARACTERIZING COMMUNICATION RESEARCH FUNDED BY THE NATIONAL CANCER INSTITUTE, 2013-2018: A GRANT PORTFOLIO ANALYSIS

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Background: Advancing communication science has been a priority of the National Cancer Institute (NCI) since 2001. Examining trends and gaps in funded communication research is particularly important given the rapidly changing communication environment.

Objective: To describe trends, summarize study characteristics, and identify gaps in NCI-funded communication research.

Methods: The NIH iSearch system was queried to identify NCI grant submissions from FY13-FY18 with communication keywords (e.g. "Health literacy") in the title or abstract. The search returned a total of 2,835 funded grants. After exclusion criteria were applied, 275 grants were retained for analysis. These grants were coded for topic, cancer site, cancer control continuum stage, study design, target population, socioecological model (SEM) level(s) targeted, and mention of theory.

Results: The number of communication grants funded each year remained steady between FY13 and FY18 (range: 43-51, mean: 45.8). The most frequently addressed topics were tobacco/e-cigarette use (n=100), communication behavior (n=71), and decision-making/patient engagement (n=47). Tobacco-related cancers (n=94), cancer in general (n=38), and breast cancer (n=38) were the most commonly studied cancer sites. Most grants (n=160) were at the prevention stage of the continuum, whereas end-of-life was infrequently addressed (n=15). Many grants employed randomized controlled trial (n=120) and mixed-methods approaches (n=66). However, novel study designs (e.g. Sequential Multiple Assignment Randomized Trials (SMART)) (n=5) and data linkage (n=3) were infrequently utilized. Cancer patients/survivors (n=78) and healthcare providers (n=50) were common target populations, while caregivers (n=13) and those with genetic or familial risk (n=9) were infrequently studied. While most grants did not target a particular racial/ethnic group, those that did primarily targeted African American (n=27) or Hispanic/Latino (n=26) populations. Other target groups included low SES (n=20), low literacy/English proficiency (n=17), and rural (n=11) populations. 124 grants were coded as "multilevel", while 151 grants assessed or intervened at only one level of the SEM. The individual level (n=263) and interpersonal level (n=104) were the most frequently targeted SEM levels. Among the 105 grants that mentioned a specific theory or framework, Social Cognitive Theory (n=14), RE-AIM (n=8), the Health Belief Model (n=6), and SEM (n=6) were most frequently cited.

Conclusions: The findings of this analysis suggest opportunities to advance communication science by supporting research in currently understudied areas (like communication at end-of-life), promoting additional work in underserved populations, facilitating multilevel research that incorporates higher levels of the SEM, and encouraging more systematic integration of theory.

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10:30 AM–11:30 AM

ADVANCED LUNG CANCER PATIENTS' PERCEIVED MEDICAL STIGMA AND SYMPTOM EXPERIENCES

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Lung cancer patients typically report greater symptom burden, emotional distress, and perceived stigma than patients of other cancer types. Internalization of perceived lung cancer stigma (e.g., shame, blame) has been associated with greater emotional distress, symptom severity, and delay in medical help-seeking. However, less is known about lung cancer patients' perceived stigma from their medical providers (i.e., medical stigma). In this study, we examined perceived medical stigma and its association with medical and symptom outcomes in advanced lung cancer.

Advanced, inoperable lung cancer patients (N = 102, 46% male, 83% White) were recruited from an academic cancer center in Indianapolis, IN to participate in this cross-sectional survey. Patients had an average age of 65 years (SD = 12). Most (78%) reported a history of smoking. Patients completed standardized measures of medical stigma, quality of life, functional status, medical comorbidities, and symptom severity (i.e., breathlessness, cough, sleep problems, fatigue, pain, emotional distress, nausea, and lack of appetite).

Most (77%) strongly disagreed with perceptions of medical stigma. This stigma was negatively correlated with quality of life, $r(100) = -.21, p < .05$, and positively correlated with fatigue, pain, anxiety, and depressive symptoms, $rs(96) = .24-.30, ps < .05$. Medical stigma was not correlated with other symptoms, smoking status, functional status, and number of medical comorbidities.

Findings suggest that the majority of advanced lung cancer patients did not perceive stigma from doctors and nurses at an academic cancer center. Prior research on medical stigma has been primarily qualitative or limited to single-item assessments. In our sample, perceiving greater medical stigma was associated with more severe symptoms. It is possible that patients perceiving greater medical stigma may be hesitant to seek symptom treatment or may be experiencing suboptimal care, leading to higher symptom burden. Longitudinal studies are needed to examine predictors of medical stigma and its impact in diverse samples of lung cancer patients.

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DEPRESSION AND ANXIETY SYMPTOMS IN BEREAVED CAREGIVERS OF PATIENTS WITH ADVANCED CANCER

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Background: Caregivers of patients with advanced cancer experience substantial caregiving burden and psychological distress during the illness course. However, data on depression and anxiety symptoms in bereaved caregivers and factors associated with their psychological distress are lacking.

Methods: We conducted a secondary analysis of 168 caregivers enrolled in a randomized trial of early palliative care integrated with oncology care versus oncology care alone for patients newly-diagnosed with incurable lung and non-colorectal gastrointestinal cancers and their caregivers who completed bereavement assessments at 3 months after their loved one's death. We used the Hospital Anxiety and Depression Scale (HADS) to assess patients' and caregivers' depression and anxiety symptoms at baseline within 8 weeks of diagnosis, and at 3-4 months after the patient's death (for caregivers). We asked caregivers to rate patient's physical and psychological distress in the last week of life on a 10-point scale. We used linear regression adjusting for randomization and cancer type to explore associations between patient and caregiver factors and bereaved caregivers' depression and anxiety.

Results: 30.4% (51/168) and 43.4% (73/168) of bereaved caregivers reported clinically significant depression and anxiety symptoms, respectively. Younger patient age ($B = -.06, P = 0.041$), higher patient baseline anxiety ($B = 0.28, P = 0.002$), and caregiver rating of worse physical ($B = 0.28, P = 0.035$) and psychological ($B = 0.41, P < 0.001$) distress experienced by the patient at the end of life (EOL) were associated with worse depression symptoms in bereaved caregivers. Only caregiver factors, including age ($B = -.07, P = 0.004$), female sex ($B = 1.60, P = 0.024$), and rating of worse psychological distress experienced by the patient at the EOL ($B = 0.42, P < 0.001$) were associated with worse bereaved caregivers' anxiety symptoms.

Conclusions: Bereaved caregivers of patients with advanced cancer experience substantial psychological distress which is associated with their perceptions of their loved one's distress at the EOL. Interventions to optimize EOL care for patients and reduce bereaved caregivers' psychological distress are needed.

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A RANDOMIZED PILOT STUDY OF YOGA DELIVERED IN THE CLINIC DURING CHEMOTHERAPY FOR ADULTS DIAGNOSED WITH GASTROINTESTINAL CANCERS

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Although fatigue is highly prevalent among gastrointestinal (GI) cancer patients receiving chemotherapy, there are few behavioral interventions designed to reduce this symptom during treatment. Data support efficacy of yoga for reducing fatigue when implemented as group classes in patients with breast cancer. Yet, this group delivery format is associated with lower adherence for participants who have increased fatigue and thus may unintentionally exclude those in higher need and with other barriers (e.g., travel). Yoga Skills training (YST) teaches the key elements of yoga (meditation, movements, breathing practices) and is delivered individually in the chair during chemotherapy to lessen barriers to participation. We are conducting a stratified randomized controlled pilot study of YST as compared to an empathic Attention Control (AC) in a sample of adults diagnosed with GI cancers receiving first-line Fluorouracil-based chemotherapy. The YST consists of four 30-minute sessions plus daily home practice. AC interventionists use techniques such as active listening and ask participants to keep brief daily diaries. We are assessing feasibility of recruitment, intervention adherence, questionnaire completion, and an estimate of variance for fatigue. Participants complete self-reported assessments including PROMIS fatigue at weeks 8, 10 (primary) and 14. Participants also complete semi-structured interviews to provide further feedback on study acceptability. Forty-four of 77 eligible adults agreed to participate (57%; YST n=23; AC n=21). Participants had a mean age of 58 years (range 33–89 years), and a majority were women (52%), White (86%), and had colon cancer (75%). Common reasons for declining participation included not interested (n=16) or overwhelmed (n=12). To date, adherence to the four sessions is 82% (non-adherence primarily because cancer treatment changes made sessions not possible) and 74% of participants have completed the primary outcome assessment. Fatigue at baseline (Mean=53.1) was higher than the standardized mean with less than typical variability (SD=7.2). Data collection will be complete and results un-blinded by group for presentation. Feasibility of integrating the YST with clinical care during chemotherapy is supported by acceptable rates of recruitment, adherence, and retention. These data provide valuable estimates and feedback for informing future research to assess the efficacy of the YST for fatigue.

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AN RCT TO TEST THE EFFECTIVENESS OF COPING WITH CANCER IN THE KITCHEN, A NUTRITION EDUCATION PROGRAM FROM DIAGNOSIS AND BEYOND

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Introduction: Eating a diet rich in whole grains, fruits and vegetables (F&V), and beans can reduce cancer risk and may reduce the risk of cancer returning. The aim was to test the effectiveness of Coping with Cancer in the Kitchen (CCK) for implementing a healthy plant-based diet and improving quality of life.

Methods: The intervention was 8 weekly 90-minute sessions with nutrition education, culinary demonstrations, and professionally facilitated social and emotional support. Cancer survivors at 2 community organizations in New Jersey and California were randomly assigned to CCK or control (printed materials only) arms. We examined treatment effects by comparing patterns of change over time in outcomes measured at baseline, 9, and 15 weeks using multilevel mixed effects linear regression.

Results: Among 53 participants (mean age 61 y; 92% female; 61% with overweight or obesity), 48/53 (91%) and 30/53 (57%) completed the 9 and 15-week surveys, respectively. Compared to the control arm, CCK caused a greater 9-week reduction in barriers to F&V consumption (-0.26 v +0.16, p=.002; average rating across 15 items). Furthermore, CCK significantly improved nutrition knowledge/skills (p=.0054) and cooking confidence (p<.001) with significantly greater gains (average 5-point Likert rating) from baseline to 9 weeks compared to the control arm (knowledge/skills: +0.76 v +0.25, p=.0064; cooking confidence: +0.68 v +0.13, p=.011). Mean (±SE) cooking confidence at 15 weeks was significantly greater in the CCK arm (4.2±0.20 v 3.6±0.20; p=.038). Although not statistically significant, the baseline to 9-week change trended in a positive direction for fatigue (-2.19 v -0.90, p=.051; 11-point Likert), quality of life (+1.54 v +0.31, p=.35; FACT-G7), psychological distress (-0.50 v +0.54, p=.15; PHQ-4), F&V/day (+0.16 v +0.009 cup equivalents, p=.29) and whole grains/day (+0.13 v +0.02 oz equivalents, p=.33; NCI Dietary Screener Questionnaire). Results from staff training and weekly semi-structured interviews with staff provided confidence the intervention was implemented with high fidelity.

Conclusion: Cancer survivors participating in the evidence-based nutrition and psychosocial intervention experienced significant changes that resulted in greater knowledge, fewer barriers, and higher confidence preparing tasty plant-based foods; however, positive changes in quality of life, emotional well-being and dietary intake were modest and did not reach statistical significance but were in the anticipated direction of effect.

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USING THE MULTI-PROCESS ACTION CONTROL APPROACH IN A PHYSICAL ACTIVITY INTERVENTION FOR PROSTATE CANCER SURVIVORS: A PILOT, RCT

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Background: Physical activity (PA) has a positive impact on clinical outcomes in prostate cancer survivors (PCS). However, the majority of PCS are not meeting public health PA guidelines. For successful behavior change, it is necessary to move beyond intention-focused theories towards constructs proposed to reduce the intention-behavior gap to increase PA. One such framework is the Multi-Process Action Control (M-PAC) framework.

Purpose: To examine the effects of a supervised PA program plus standard exercise counseling (PA+EC) versus a supervised physical activity plus motivationally-enhanced behavioral counseling (PA+BC) on the motivational, regulatory, and reflexive processes from the M-PAC model in PCS.

Methods: This study was a pilot two-armed, single blind, randomized controlled trial (RCT). Twenty-six PCS were randomized a 12-week supervised PA program plus standard exercise counseling (PA + EC group; $n = 13$) or a 12-week supervised PA plus behavioral counseling based on the M-PAC model (PA + BC group; $n = 13$). The goal of both arms of the intervention was to gradually increase PA to the public health guidelines. PCS in both arms were provided with supervised PA that tapered to a home-based program. Analyses of covariance were used to compare M-PAC constructs between the two groups from baseline to 12-weeks (post-intervention).

Results: PCS had a $M_{age} = 65.6 \pm 6.8$ and mean months since diagnosis of 93.5 ± 65.6 . For motivational processes, group differences favoring the PA + BC group were noted for instrumental attitude [$M_{adj} = +0.3$; 95% CI: -0.2-0.8; Partial $\eta^2 = .06$], injunctive [$M_{adj} = +0.1$; 95% CI: -0.4-0.5; Partial $\eta^2 = .00$] and descriptive norm [$M_{adj} = +0.1$; 95% CI: -0.7-0.8; Partial $\eta^2 = .00$], and perceived behavioral control (PBC) [$M_{adj} = -0.7$; 95% CI: -1.7-0.2; Partial $\eta^2 = .17$]. For regulatory processes, higher scores for planning were noted in PA+BC [$M_{baseline} = 3.3$; $SD = 1.3$; $M_{post} = 3.9$; $SD = 1.9$]. For reflexive processes, higher scores were noted in the PA+BC for habit [$M_{baseline} = 2.6$; $SD = 1.5$; $M_{post} = 3.3$; $SD = 1.5$] and role identity [$M_{baseline} = 2.1$; $SD = 1.3$; $M_{post} = 3.1$; $SD = 1.8$]. Overall, PCS reported that the PA+BC sessions were somewhat helpful in increasing PA levels ($M_{range} = 4.3-5.0$).

Conclusions: This pilot study provides some support for the effectiveness of the interventions in producing positive changes on the motivational, regulatory, and reflexive processes, yet insight into creating more meaningful counselling sessions are recommended to inform a larger RCT.

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10:30 AM-11:30 AM

ASSOCIATION BETWEEN PERCEIVED DISCRIMINATION IN MEDICAL CARE AND SELF-EFFICACY FOR PURSUING BREAST CANCER FOLLOW-UP CARE

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Patients' perception of discrimination in medical care may be an important factor associated with differences in perceived self-efficacy for pursuing breast cancer follow-up care. To examine this relationship, cross-sectional data were collected from survivors of Stage I-III breast cancer who received care at community hospital-based oncology clinics ($N = 100$). Participants were two to five years post treatment, with a mean age of 62 years ($SD = 11$). The sample identified as White (43%), Black (36%), and American Indian (21%). Almost a third (30%) of participants had a high school education or less, 41% had completed vocational training or some college, and 29% had a college degree or higher. Most participants (87%) had health insurance covering mammograms and breast cancer follow-up care. Perceived discrimination in medical care and perceived self-efficacy for pursuing follow-up care were measured. Perceived discrimination was coded as none (0) vs. any (1). A one-way ANCOVA was conducted to examine the association between perceived discrimination and self-efficacy after controlling for health insurance status (demographic covariates were included if significantly ($p < .05$) associated with self-efficacy). Almost half of the sample (42%) reported perceiving discrimination in medical care related to race or socio-economic status. Self-efficacy total scores ranged from 5.33 to 10 on a scale from 0 to 10 ($M = 9.05$, $SD = 1.00$). After adjusting for health insurance status, there was a statistically significant difference in self-efficacy for pursuing follow-up care between participants who perceived discrimination in medical care versus not [$F(1,94) = 13.56$, $p < 0.001$, $d = .76$]. Participants who perceived discrimination in care reported lower self-efficacy for pursuing follow-up care. The results indicate that perceived discrimination is associated with low self-efficacy for pursuing follow-up care among breast cancer survivors. Thus, programmatic efforts are needed to improve hospital systems' and providers' awareness of discrimination in care, increase competency, and teach strategies for mitigating the negative impact of such experiences on patients' self-efficacy for pursuing follow-up care. Teaching patients strategies to communicate concerns to their medical providers may also increase self-efficacy. More research is required to understand experiences of discrimination in care and the impact on patient self-efficacy and care engagement after breast cancer treatment.

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ACCEPTABILITY OF VIDEO-CONFERENCED STRESS MANAGEMENT AND RELAXATION TRAINING (VSMART) IN OLDER WOMEN WITH BREAST CANCER

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Introduction: Increased distress, common during breast cancer (BCa) treatment, is associated with inflammatory and immune processes implicated in disease progression. Our group has previously demonstrated that 10-week group cognitive behavioral stress management (CBSM) is efficacious at improving psychological and physiological adaptation and long-term disease outcomes in BCa patients. Since inflammation increases and immunity decreases with aging, older women with BCa have a particular need for stress management. As the older adult population and BCa incidence continue to rise in the U.S., it is imperative to explore innovative solutions to the growing need, such as remotely-delivered CBSM interventions which utilize less resources and have higher accessibility than in-person programs.

Methods: An RCT is currently being conducted testing the effects of a novel remotely-delivered group CBSM intervention (R-CBSM) on improving health and quality of life in BCa patients aged 50+. Stage 0-IIIB BCa patients who are post-surgery but have not started adjuvant therapies are randomized to 10 weeks of R-CBSM or a wait-list control that receives R-CBSM approximately six months post-baseline. Participants connect to weekly, 90-minute, video-conferenced sessions and complete out-of-session activities on tablets. Following their participation, participants complete acceptability and program evaluation surveys.

Results: Participants with available data to date (N=32) were age 52-85 (M=64). In regards to potential technological concerns with older adults, 97% of participants reported they were comfortable with the technical requirements of attending group sessions and 100% reported the tablet was easy to use. Regarding retention of non-specific therapeutic factors with remote administration, 100% of participants stated they were able to share their feelings about BCa during group, 88% reported feeling connected to the other members of the group, and 50% reported staying in touch with group members after conclusion of the program. Finally, 100% endorsed receiving benefit and 100% stated they felt better able to cope with stress after participating.

Conclusions: Preliminary results suggest high acceptability of a remotely-delivered platform for group stress management in BCa. Use of technology enables a scalable, practical and accessible delivery approach that could reach more vulnerable and underserved patients with BCa and other health conditions in the aging population.

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THE INCREASING VALUE OF EHEALTH IN PATIENT-CENTERED CANCER SURVIVORSHIP CARE: CURRENT STATE AND FUTURE DIRECTIONS

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Objective: Survival benefit in cancer is often offset by multiple challenges that survivors, their families, and caregivers face across the cancer care continuum. Over the past decade, there have been increasing efforts in developing and implementing technology-based programs to reduce symptom burden and improve health outcomes. This review explored the value of electronic health (eHealth) or mobile health (mHealth) evidence-based interventions as they relate to survivorship care and their ability to mitigate many symptoms faced by cancer survivors.

Methods: A literature search was conducted through PubMed to identify relevant studies of technology- and evidence-based interventions used to improve symptoms after cancer treatment. Search terms included: 'cancer AND survivorship AND ehealth,' 'cancer AND survivorship AND mhealth,' 'cancer AND survivorship AND smartphone,' 'cancer AND survivorship AND web,' 'cancer AND survivorship AND web-based,' and 'cancer AND survivorship AND internet.' Articles included in this review were from 2009 until September 2019.

Results: A total of 29 studies were reviewed. Findings suggest that generally, eHealth interventions have shown potential at mitigating symptoms such as pain, psychological distress, fatigue, and cancer-related cognitive impairment (CRCI) across various cancer populations. Several consistent findings suggest that eHealth programs post hematopoietic stem cells demonstrated efficacy in decreasing pain symptoms; while psychological distress was decreased in patients with advanced prostate cancer following mHealth interventions. Similarly, fatigue was improved in survivors of chronic myeloid leukemia and CRCI in advanced prostate cancer was reduced. Patient reported outcomes (PROs) monitoring via eHealth programs is increasingly being used to identify symptoms or toxicities that are often underreported or identified during clinical visits to identify potential targets of intervention.

Conclusions: When eHealth interventions are designed properly, with the integration of PROs, they can help to reduce symptom burden in cancer survivors. Limitations include small samples sizes, and limited follow-up periods and provider engagement. Future work is needed to conduct studies with larger sample sizes in order to determine the clinical effectiveness of these interventions. Over the past decade, there has been increasing efforts in developing and implementing technology-based programs to reduce symptom burden and improve health outcomes, and several studies have shown a survival benefit among patients participating in these programs.

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10:30 AM-11:30 AM

THE ROLES OF AGE, CANCER IMPACT, AND COPING STRATEGIES IN PREDICTING POSTTRAUMATIC GROWTH: A 21-MONTH PROSPECTIVE STUDY

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Objectives: Research has shown that age is associated with levels of positive life changes, or posttraumatic growth (PTG), as a result of coping with cancer. However, it is unclear how age plays a role in the cancer coping process, which has implication in PTG. We examined whether coping strategies interact with cancer impact in predicting PTG, and explored whether age moderates the relationship of interests.

Methods: Breast cancer patients ($N = 293$; $M_{age} = 46.40$, $SD = 8.30$ range = 25-69) who had received surgery within the past 2-4 months (T1) were enrolled to complete measures of cancer impact, the Brief COPE (self-sufficient, social-oriented, and avoidant coping), and the Posttraumatic Growth Inventory (PTGI). At 21 months follow-up (T2) they completed the PTGI again. Covariates (marital status, education) and T1 PTG were entered in the first step of the multiple hierarchical regression. Cancer impact, coping, and age were entered in the second step. The interaction terms of the three predictors of interest were added in the third step.

Results: Overall, younger age predicted greater PTGI ($\beta = -0.12$, $p = 0.01$). Three-way interactions were found for self-sufficient and socially-supported coping. For younger women, cancer impact predicted greater PTG among those who used less self-sufficient and socially-supported coping ($t = 2.29$ and 1.87 , $p = 0.02$ and 0.06). On the other hand, cancer impact significantly predicted greater PTG among older women who adopted greater self-sufficient and socially-supported coping ($t = 2.63$ and 2.39 , $p = 0.01$ and 0.02). Cancer impact significantly predicted lower PTG among older women who adopted lower level of self-sufficient coping ($t = -1.98$, $p = 0.05$). The three-way interaction was not significant for avoidant coping, but a two-way interaction among age \times avoidant coping was significant, showing that higher avoidant coping predicted lower PTG among older women ($t = -2.20$, $p = 0.03$). The same relationship was not found among the younger.

Conclusions: While younger women overall report higher levels of PTG, the experience is affected by the level of coping and its relationship with cancer impact. The findings paint a more comprehensive picture of PTG pathways at different age.

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10:30 AM-11:30 AM

SPIRITUALITY AMONG FAMILY CAREGIVERS OF CANCER PATIENTS: THE SPIRITUAL PERSPECTIVE SCALE

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Purpose: Spirituality is a critical resource for many family caregivers of patients with cancer. However, studies on spirituality in caregivers are hampered because measures of spirituality lack consistency and have been not validated in cancer caregivers. Thus, this study examined the validity of the Spiritual Perspective Scale (SPS) among cancer caregivers and explored whether measurement bias may influence differences in spirituality across caregiver and patient characteristics.

Methods: In this secondary analysis, data obtained from 124 caregivers of cancer patients participating in a prospective burden and stress study were used to evaluate the criterion and construct validity of the 10-item SPS. A Multiple Indicators Multiple Causes (MIMIC) model was tested to explore group differences in the association between a latent spirituality factor and characteristics of caregivers and patients.

Results: Overall reliability of the SPS was good (Cronbach alpha = .95). The SPS scores were predictive of higher meaning and purpose ($r = .32$, $p = .004$) and lower depression ($r = -.22$, $p = .046$) at three-month follow-up. Construct validity of the SPS with a single-factor structure was supported in cancer caregivers. A direct effect of race was not substantial and did not alter the pattern of results. While adjusting for the direct effect, caregivers who were older, female, ethnic minorities, less educated, affiliated with a religion, and who provided care to another individual in addition to the cancer patient had greater levels of spirituality. Group differences explained 36.3% of the variance of a latent spirituality factor.

Conclusions: Psychometric validation of the SPS was supported in cancer caregivers. Understanding differences in caregivers' spirituality by considering use of psychometrically sound measures and reduction of measurement bias deserves more attention to optimize spirituality assessment and support in cancer caregiving.

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10:30 AM–11:30 AM

TEXT MESSAGE PREFERENCES FOR SURVEILLANCE COLONOSCOPY REMINDERS AMONG COLORECTAL CANCER SURVIVORS

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Background: Surveillance colonoscopy 1-year after colorectal cancer (CRC) surgery effectively reduces CRC-mortality, yet less than half of survivors undergo this procedure. Text message reminders can improve CRC screening and other health behaviors but use of this strategy to address barriers to CRC surveillance has not been reported.

Objectives: The goal of this qualitative study was to assess CRC survivor perspectives on barriers to colonoscopy to inform the design of a theory-based, short message service (SMS) intervention aimed to increase utilization of surveillance colonoscopy.

Methods: CRC survivors in Western Washington participated in one of two focus groups to explore perceived barriers to completing surveillance colonoscopy and preferences for SMS communication. Content analysis using codes representative of the Health Belief Model and Prospect Theory constructs were applied to qualitative data.

Results: Thirteen CRC survivors reported individual (e.g., fear, low perceived susceptibility, avoidance), interpersonal, and system level barriers to surveillance colonoscopy completion. Participants were receptive to receiving SMS reminders to mitigate these barriers. Participants also suggested that SMS reminders begin no earlier than 9 months following CRC surgery, include educational content, and be personalized to patients' communication preferences.

Conclusions: Our study demonstrates that CRC survivors perceive SMS reminders as an acceptable, valuable tool for CRC surveillance. Further, there may be value in integrating theoretical frameworks to design, implement, and evaluate SMS interventions to address individual-level barriers to CRC surveillance. As physicians play a key role in CRC surveillance, provider and system-level interventions that could additively improve the impact of SMS interventions are also worth exploring.

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10:30 AM–11:30 AM

EXPOSURE TO TRAUMA AND INFLAMMATION MARKERS OF BREAST CANCER PROGRESSION: A PILOT STUDY WITH PUERTO RICAN CANCER PATIENTS

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Background and Purpose: There is growing evidence that highlights inflammation as a common factor in depression, chronic psychosocial stress and tumor microenvironment. However, little is known about the role of current and past exposure to social-environmental adversity (SEA; e.g., child abuse, domestic violence) in the relationship between depression and markers of inflammation in the breast cancer (BC) tumor microenvironment.

Methods: Participants (n=32) were recruited before undergoing BC tumor surgery and completed a package of surveys through interviews that included the PHQ-8, Adverse Childhood Events (ACE) questionnaire and the Trauma History Questionnaire (THQ). Regarding BC tumor samples, 10x fields were quantified for CD68 (macrophages), CD19 (B cells) and CD3 (T cells). Pearson Correlation Tests are used to explore correlation between the variables of interest.

Results: Preliminary findings (n=22) reveal that the most common SEA experience were general disasters and trauma (n=21), physical and sexual abuse (n=16) and, Crime-related trauma (n=13). Out of those reporting childhood abuse experiences (n=16), 6 reported exposure to more than 4 ACE experiences. Mean score of PHQ-8 symptoms were low ($M=3.77 \pm 4.19$). The relationship between depression symptoms and inflammatory markers of tumor microenvironment (macrophages, B cells and T cells) was not statistically significant. However, there were statistically significant relationship between B cell lymphocytes and adverse childhood events ($p < 0.05$).

Conclusions: Significant correlations between ACE and B cells lymphocytes are promising considering that Lymphocytes has been recognized as a new hall mark in BC treatment prognosis and outcomes.

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D131

10:30 AM-11:30 AM

#COLONCANCER: WHO IS TWEETING WHAT?

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Background: Little is known about communications related to colorectal cancer on social media. Knowledge of what colorectal cancer information is available and how it is spread on social media may inform strategies to communicate risk and prevention strategies. This information may be particularly important considering that colorectal cancer is largely preventative through lifestyle modification and widespread screening. This study focuses on how colorectal cancer is discussed on the social media platform Twitter.

Methods: A random sample of 1,000 colorectal cancer-related tweets including the hashtags #coloncancer, #colorectalcancer, and #rectalcancer were collected in early 2019 using the Netlytic platform. In a quantitative content analysis, two independent coders have analyzed a subset of 250 tweets. Coding of the remaining messages is underway and will be completed in October 2019. Tweets are coded for a variety of factors, including poster identity, tweet text and visual features, colorectal cancer-related information posted, and the presence of constructs of the Health Belief Model (HBM) and the Extended Parallel Processing Model (EPPM). Engagement with tweets will also be analyzed.

Results: Thirty-four percent of tweets were posted by a medical doctor, researcher, or other expert, while only 14.4% of messages were by lay individuals. Fewer tweets (16.8%) were posted by traditional health/medical organizations relative to non-medical organizations (31.2%). The majority of tweets included a visual (78.8%). The overall message format were typically a mix of image and text (50.3%) or primarily text-based (44.2%). The majority of tweets (61.2%) used thematic framing, while only 25.6% used episodic framing. A plurality (32.8%) of colorectal cancer content referred to treatment, while 18.4% mentioned screening, and 17.2% mentioned prevention and risk information. Considering the theoretical constructs of the HBM and the EPPM: only cues to action for screening, and severity of and susceptibility to colorectal cancer were present in at least 10% of the sample. The median retweet frequency was 2.00, the median like frequency was 5.00, and the median reply frequency was 0.

Conclusions: Colorectal cancer-related messages were primarily posted by experts and organizations. Overall engagement with tweets was low, suggesting minimal spread of information about colorectal cancer on Twitter. Theoretical constructs which aid effective communication were also infrequently present. There was a relatively high proportion of visuals present given that Twitter does not require an image. The complete study results will provide additional insights for public health professionals and health communication researchers about the conversation related to colorectal cancer on social media and ultimately, may aid the development of future social media-based interventions.

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10:30 AM-11:30 AM

SELF-DISCLOSURE TODAY HELPS YOU SLEEP BETTER TOMORROW: DAILY INVESTIGATION AMONG COLORECTAL CANCER PATIENTS

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Self-Disclosure Today Helps You Sleep Better Tomorrow: Daily Investigation among Colorectal Cancer Patients

Sleep disturbance is prevalent and a substantial health concern among cancer patients. Sleep disturbance includes prolonged sleep onset latency (SOL) and extended waking after sleep onset (WASO), which also contribute to poor sleep efficiency (SE). A growing body of literature has shown the significant role of interpersonal factors, such as self-disclosure with a partner, in sleep disturbance. The current study expanded the investigation to adult cancer patients.

Colorectal cancer patients (n = 48, M=55.5 years old, 40% female, 5 months post-diagnosis) completed daily self-disclosure items regarding sharing one's feelings and thoughts with partner, as well as the Sleep Consensus Diary across 14 consecutive days, from which SOL, WASO, and SE were derived.

Patients reported good SE (M=89%) but notably long SOL (M=22.74 minutes) and WASO (M=19.76 minutes). Low levels of daily self-disclosure (M=2.61) were also reported. Multilevel modeling was employed to predict SE, SOL, and WASO separately by daily self-disclosure with the partner on the same day and on the subsequent day. Greater self-disclosure was revealed to predict better SE on the subsequent day (B=0.04, p<.002) but not on the same day. Additionally, greater self-disclosure predicted shorter WASO on the subsequent day (B=-11.67, p<.002) but again, not on the same day. Self-disclosure was not significantly related to SOL.

Preliminary evidence suggests salutary effects of self-disclosure on attenuated sleep fragmentation and more efficient sleep on the days that follow. Findings highlight interpersonal contributions to cancer patients' sleep health and warrant further investigation of the psychosocial pathways of the lagged benefit of self-disclosure on sleep that utilizes subjective and objective collection methodologies. Tailored sleep interventions augmenting the communication component of cancer patients' thoughts and feelings with their partners are also warranted.

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10:30 AM–11:30 AM

CONTENT CONSIDERATIONS FOR VIRTUAL HUMAN TECHNOLOGY EHEALTH INTERVENTIONS DELIVERING HEALTH AND NUTRITION MESSAGES

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Introduction: Incorporating user-generated feedback into eHealth interventions can facilitate development of credible and engaging messages that encourage promoted health behaviors. Virtual Human Technology (VHT) is an innovative technology that can facilitate web-based communication of health messages. Virtual Health Assistants (VHA) are computer-generated human characters that interactively engage users in a virtual setting and can be tailored for demographic concordance. The purpose of this study was to gather user-generated insights to develop an interactive nutrition risk module for an existing VHA-delivered colorectal cancer screening (CRC) intervention. The study is informed by the M.A.I.N model, which is used for examining credibility in web-based content. We identify specific content domains associated with credibility that should be considered when developing VHA-delivered nutrition risk information for adults.

Methods: Adults between 50–73 years old attended focus groups and think-aloud interviews to inform the development of a VHA-delivered intervention promoting CRC screening. In keeping with a user-centered design approach, participants used mobile devices to test a 12-minute CRC screening intervention that included 2 interactive questions on nutrition risk factors for CRC (e.g. alcohol and red meat). We analyzed comments pertinent to healthy eating, food, and nutrition risk using thematic analysis for emergent themes. This analysis will inform a culturally-relevant expansion of the nutrition content.

Results: Four content domains emerged as important components of credible messages delivered by a VHA: 1) accuracy (e.g. “I like my info from something that has been researched, has medical credentials, like a doctor or nutritionist”), 2) novelty (e.g. “I was surprised red meat can increase colon cancer risk. I said whoo! Because I like red meat”), 3) understandability (e.g. “Even a child could understand what she was saying”), and 4) missing content (e.g. “They should add fiber. That’s very important to me”). Risk messages led to desired outcomes (e.g. “Because of the virtual thing I saw, I think I can [get screened] now”) but also should be calibrated so users do not discredit screening (e.g. “Then you’re at high risk, the damage has already been done”). We discuss definitions of domains and implications of participant concerns specific to nutrition content.

Discussion: Credibility, a combination of trustworthiness and expertise, is important for engaging diverse audiences in health communication. Tailoring to content preferences may increase credibility of VHAs and messages embedded in such interventions. Strategies for implementing VHA-delivered messages should include assessing existing user preferences. Additionally, future research should test what content domains are most effective for producing credible risk messages and behavior change.

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10:30 AM–11:30 AM

A PERSON-CENTERED APPROACH TO UNDERSTAND DELAY OF TREATMENT FROM COLORECTAL CANCER DIAGNOSIS BY SOCIODEMOGRAPHIC FACTORS

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Purpose: Treatment of delay is associated with worse colorectal cancer (CRC) outcomes. Furthermore, disparities exist in treatment. The risk profiles of those delaying or not delaying treatment are relatively unknown. We used latent class analysis (LCA) to identify the patterns of highest risk in treatment delay among CRC patients while accounting for subgroup differences in sociodemographic and health insurance characteristics.

Methods: LCA refers to a technique to identify unobservable – or latent – subgroups within a population. We used LCA on the Tennessee Health Department 2005–15 Cancer Registry data to assess the impact of sociodemographic and health insurance factors on treatment delay of CRC to identify possible risk elements (N=35,412). Analyses were separated into malignant and in situ CRC by tumor behavior code. Factors available for LCA included: sex (male/female); age categories based on U.S. Preventive Services Task Force CRC screening recommendations; race; marital status; type of health insurance; county of residence (non-Appalachian/Appalachian); and treatment delay in number of days (≤30/ >30).

Results: Our LCA using Mplus 8.2 for treatment delay of CRC revealed a five-class solution with an entropy of 0.69 (N=34,126) and a four-class solution with entropy of 0.67 (N=1,286) were the best fitting models for malignant and in situ, respectively. The highest treatment delay subgroup among the malignant CRC group (3% of sample; n=1,125/34,126) had the highest conditional probabilities of being Black, residing in a non-Appalachian county, and using public health insurance. The highest treatment delay subgroup among the in situ CRC group (13% of sample; n=169/1,286) had the highest conditional probabilities of being women, widows, and using public health insurance.

Conclusion: We are among the first to examine treatment delay subgroups within malignant and in situ CRC groups using LCA. Further work will be needed to understand the longitudinal trends using latent transition analysis and time-varying effect modelling. Our findings help contribute to the growing body of work using person-centered analyses to understand health disparities to ultimately promote more efficient and efficacious interventions, and ultimately health equity.

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10:30 AM-11:30 AM

USING PROGRESSIVE MUSCLE RELAXATION TO IMPROVE BIOBEHAVIORAL OUTCOMES IN ADVANCED LUNG CANCER

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Introduction: Patients with advanced lung cancer experience severe symptoms of anxiety, breathlessness, insomnia, pain, and fatigue. Although new treatments for lung cancer are extending survival, evaluation and management of the physical and psychological symptoms associated with the disease and its treatment remain critical. Interventions, such as those involving guided imagery and meditation, have shown mixed effects and often require a substantial time commitment from patients. Progressive muscle relaxation (PMR) is an empirically supported intervention that meets the unmet clinical need for a brief and effective treatment for the reduction of symptoms in this population.

Methods: A static group comparison design was used for a quality improvement effort to enhance standard of care (SOC). Patients with newly diagnosed advanced lung cancer were offered a brief (20-minute) PMR session during their initial clinic visit for cancer treatment determination. The PMR group (n=40) received PMR and completed pre (initial visit) and post (3-4-week follow-up) assessments of anxiety (Generalized Anxiety Disorder-7 Scale), breathlessness (American Thoracic Society for the Division of Lung Diseases Questionnaire), insomnia (Medical Outcomes Study Sleep Scale), pain (Brief Pain Inventory), and fatigue (Fatigue Symptom Inventory-Revised). The control group (n=32) was assessed on one occasion only, during the 3-4-week follow-up visit. Linear regressions compared pre/post analyses for the PMR group, and post data between the two groups, controlling for age, performance status, smoking history, and toxicities. An alpha level of .10 was used for this pilot study.

Results: Breathlessness and pain improved from pre to post in the PMR group (b=2.07, p=.071; b=1.96, p=.036, respectively). There were no significant changes in anxiety or insomnia (ps > .10). Compared to SOC, patients in the PMR group reported less pain (b=2.48, p=.046) and less fatigue (b=2.44, p=.014) at post assessment.

Conclusions: PMR effectively reduced symptoms of breathlessness, pain, and fatigue among patients with advanced lung cancer. After a very brief education and practice session during the overwhelming time surrounding a diagnosis of lung cancer, PMR was able to reduce important symptoms faced by patients with this disease. Interventions introducing PMR at the initial pre-treatment appointment may provide an improvement to SOC lung cancer treatment; further work with such interventions is necessary.

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10:30 AM-11:30 AM

JUSTICE BELIEFS REDUCE THE EFFECT OF BARRIERS ON PERCEIVED BEHAVIORAL CONTROL AND INTENTIONS FOR COLORECTAL CANCER SCREENING

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Introduction: Screening for colorectal cancer (CRC) is vital for early detection and lowering the risk of mortality. CRC screening is particularly important for African Americans, who have the highest risk of death from colorectal cancer in the United States. Perceived barriers to screening (e.g., discomfort, financial costs) likely contribute to lower screening rates for colorectal cancer among African Americans, potentially by affecting perceived behavioral control (PBC) over CRC screening and, in turn, affecting intentions to obtain CRC screening. Strategies to address perceived barriers therefore may be critical. The current study explored whether tendencies to believe in justice (justice beliefs) might mitigate deleterious effects of perceived barriers on receptivity to CRC screening in an African American sample. We expected that believing the world to be personally just (fair for one's self) would attenuate the deleterious impact of perceived barriers on CRC screening PBC, thereby indirectly affecting intentions to obtain CRC screening.

Method: CRC screening deficient African American participants (N = 404, 50-75 years old) completed validated measures of perceived CRC screening barriers ($\alpha = .85$), PBC ($\alpha = .81$), and intentions to obtain CRC screening ($\alpha = .95$). Participants also completed a measure of personal justice beliefs, measuring the extent to which they perceived the world to be personally fair. Personal justice beliefs served as our expected moderator of the effect of perceived barriers on PBC and intentions.

Results: Perceived barriers and justice beliefs significantly interacted to predict PBC ($b = 0.09$, $p = .01$) and indirectly predicted intentions through PBC ($b = 0.05$, $p = .02$). Among participants low in personal justice beliefs, perceived barriers were negatively associated with PBC over CRC screening ($b = -0.37$, $p < .001$). However, among participants high in personal justice beliefs, perceived barriers did not negatively impact PBC over CRC screening ($b = -0.13$, $p = .06$). In turn, high PBC predicted higher intentions to obtain CRC screening ($b = 0.61$, $p < .001$).

Discussion: Personal justice beliefs are a psychological resource that may allow African American individuals to overcome the deleterious effects of perceived barriers on receptivity to CRC screening. Interventions aimed at encouraging CRC screening and addressing extant screening disparities might be developed to augment the strength of or access to personal justice beliefs.

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10:30 AM–11:30 AM

NOVEL BIOMARKERS OF TREATMENT-INDUCED MUSCLE DAMAGE, CANCER-RELATED FATIGUE AND EXERCISE: AN RCT IN 90 BREAST CANCER PATIENTS

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Background: Radiation and hormone therapy may damage skeletal muscle and lead to cancer-related fatigue (CRF). Developmental myosin light chain 5 (MYL5) and myosin heavy chain 8 (MYH8) are required for normal muscle regeneration. Up-regulated serum levels of MYL5 and MYH8 resulting from radiation and hormone therapy may increase muscle degradation and lead to CRF, especially physical CRF—one of the multidimensional subcomponents of overall CRF. In this study, we investigated the effect of a 6-week aerobic and anaerobic exercise intervention, called Exercise for Cancer Patients (EXCAP), on (1) CRF (overall and physical), (2) serum protein levels of MYL5 and MYH8, and (3) the association of CRF (overall and physical) with these novel biomarkers.

Methods: Ninety sedentary breast cancer patients (55.5 ± 9.6 years, 79% white, 52% receiving radiation therapy, 48% receiving hormone therapy) were consented and participated in this phase II RCT. Patients were randomized into two arms: (1) standard cancer treatment (Control) or (2) standard cancer treatment plus EXCAP. Serum levels of MYL5 and MYH8 by ELISA assays and CRF (total and physical) by patient-report via the Multidimensional Fatigue Symptom Inventory were assessed pre- and post-intervention.

Results: T-tests showed significant reductions in overall CRF and physical CRF among exercisers (all $p < 0.05$), but not in controls (all $p > 0.05$), with significant group differences (all $p < 0.05$). T-tests also revealed statistical trends for down-regulation of MYL5 and MYH8 serum protein levels from pre- to post-intervention in exercisers (all $p = 0.17$), but not in controls. Spearman correlations also reveal statistical trends, in exercisers, where decreases in MYL5 and MYH8 serum protein levels are directly associated with decreases in total CRF (MYL5 $r = 0.23$, $p = 0.17$; MYH8 $r = 0.30$, $p = 0.07$) and physical CRF (MYL5 $r = 0.29$, $p = 0.08$; MYH8 $r = 0.39$, $p = 0.02$).

Conclusions: EXCAP improves overall and physical CRF. EXCAP may also protect against cancer treatment-induced skeletal muscle damage via its effects on MYL5 and MYH8. Changes in these novel biomarkers may mediate changes in overall and physical CRF. Further phase III RCTs are needed to confirm these findings. Funding NCI UG1CA189961, NCI K07CA120025, T32 CA102618. Clinical Trial: NCT00851812.

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10:30 AM–11:30 AM

RELATIONSHIPS BETWEEN PSYCHOSOCIAL FACTORS, TREATMENT SIDE EFFECTS, AND ADHERENCE TO HORMONAL THERAPY AFTER BREAST CANCER

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Objective: Although adjuvant hormonal therapies (AHTs; e.g., tamoxifen, aromatase inhibitors) are effective in reducing cancer recurrence and mortality in estrogen receptor-positive breast cancer patients, nearly one-quarter of patients are unable to adhere to them. Further, prior interventions to improve adherence to AHTs have been largely based on education and reminders, and have been ineffective. The present study examines relationships between self-reported adherence, barriers to adherence, side effects, and potentially modifiable psychosocial factors such as self-efficacy for adherence, and healthcare providers' communication style. Findings may provide insight into more fruitful intervention targets and strategies to improve adherence to AHTs.

Methods: Breast-cancer survivors ($N=105$) who had finished primary treatment and were prescribed an AHT completed a self-report questionnaire (via mail or online). Self-reported adherence, barriers to adherence (intentional, unintentional, and medication/healthcare system related), self-efficacy for adherence, intrinsic motivation for adherence, depressive symptoms, self-reported side effects, and healthcare providers' encouragement of autonomy were measured.

Results: Women were on average 61.20 years old ($SD=9.08$), most often retired (49%), married (69.5%), and had a subjective socioeconomic status above average (82.1%). Most (61%) were post-menopausal at diagnosis; and 50%, 50%, 55%, and 63% had mastectomy, chemotherapy, lumpectomy, and radiation as primary treatment, respectively. Mean months since diagnosis was 36.15 ($SD=23.25$) and mean months since being prescribed an AHT was 28.37 ($SD=21.10$). Results indicate that greater healthcare provider encouragement of autonomy and greater self-efficacy for adherence were both associated with fewer unintentional, intentional, and healthcare/medication-related adherence barriers. Experiencing a greater number of side effects was associated with lower self-reported adherence, greater depressive symptoms, lower intrinsic motivation to adhere, and less healthcare provider encouragement of autonomy.

Discussion: Greater healthcare provider encouragement of autonomy and greater self-efficacy for medication adherence are associated with fewer barriers to adherence, and side effects relate to a number of factors that could influence adherence. Findings suggest that healthcare provider communication style, self-efficacy, and side effect management may be worth investigating as potential targets for behavioural interventions to improve adherence to AHTs.

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10:30 AM–11:30 AM

CERVICAL CANCER PREVENTION BEHAVIORS AND HPV VACCINATION INTENTION

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In May 2018, the World Health Organization (WHO) released a call to action for the global elimination of cervical cancer. In support of this call to action, a U.S. congressional briefing was held in June 2019 to endorse and advocate for the elimination of HPV-related cancers through HPV vaccination and evidence-based cancer screening. This exploratory study aimed to explore the relationship between cervical cancer prevention behaviors and HPV vaccination intention among minority women.

This study included quantitative data collection utilizing a developed questionnaire (Phase I), and qualitative data collection using semi-structured individual interviews (Phase II). By employing a sequential, mixed-methods research design, this study explored: (1) cervical cancer knowledge, attitudes and screening behavior (2) HPV knowledge, attitudes, and HPV vaccine behaviors (3) the association between cervical cancer knowledge, attitude, Pap screening behavior and HPV vaccination intention, and (4) perceived facilitators and barriers that may influence HPV vaccination.

Phase I findings revealed majority of respondents had high cervical cancer knowledge scores and favorable attitudes towards cervical cancer screenings. 76% of respondents had high cervical cancer prevention behaviors, indicating they receive routine Pap tests at least every 3 years. HPV knowledge scores and attitude towards HPV vaccination were slightly lower compared to cervical cancer. Additionally, nearly 41% of respondents with age-eligible children had negative HPV vaccine behaviors, indicating no intention to give their child the vaccine and not initiating the HPV vaccine series. Significant associations were identified between cervical cancer knowledge and cervical cancer attitude, cervical cancer attitude and cervical cancer behavior, and cervical cancer knowledge and HPV vaccine behavior. Correlation analysis showed a significant positive relationship between cervical cancer screening behavior and HPV vaccine behavior. Phase II findings revealed perceived barriers such as low perceived susceptibility, lack of HPV knowledge and awareness, and negative provider experiences hindered HPV vaccination of the child. Perceived facilitators of HPV vaccination included positive provider experiences, personal experiences with HPV, and provider recommendation.

Women that had positive cervical cancer prevention practices were more likely to be supportive of the HPV vaccine for their child. In alignment with U.S. Healthy People 2020 goals, and the recent call to action to eliminate HPV-related cancers, findings from this study can be used to inform an additional, potentially effective HPV vaccine recommendation opportunity, which in turn could considerably increase HPV vaccination among minority adolescents and decrease racial disparities in regard to cervical cancer and other HPV-related cancers.

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10:30 AM–11:30 AM

ENGAGING 6TH THROUGH 9TH GRADE STUDENTS IN CANCER-RELATED STEM PROJECTS: A PILOT EXAMINATION OF PROJECT CLIMB MEMPHIS

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Introduction: Children experiencing poverty face a great cancer burden; by age 50, they are more likely to have a diagnosis of cancer than peers with greater financial means. Memphis ranks worst in child poverty rates among major U.S. metro areas (39% vs. the 22% national rate). There is a strong connection linking cancer disparities with socioeconomic, racial, and educational inequity. Programs are needed to engage youth in cancer prevention and control activities. The current deficit in underrepresented minorities in cancer-related research fields, suggests a need for programs to encourage youth engagement. Our findings are from a pilot program to engage underrepresented 6th through 9th grade students in cancer-related projects aiming to ignite their interest in science.

Methods: Youth (n=31, ages 12–17, grades 6th–9th) were recruited from a community organization and a high school in Memphis, TN to attend a full day summer camp. Youth participated in two groups (group 1, N=25; group 2, N=6) over two separate days. Camp consisted of an introduction to the Design Thinking process with interactive lessons on cancer biology, how cancer impacts their community, introduction to research, and interviewing techniques. The curriculum was designed in collaboration with a teacher from one of our community partner organizations. Students interviewed individuals in the community about cancer topics, used interview data to identify a cancer-focused problem in their community, and designed a solution. They were given iPads for online research and an assortment of arts & crafts supplies. By day's end, all students publicly presented proposals to solve these self-identified problems. Students completed quantitative and qualitative surveys at day's end. Parents completed surveys a few days post-program.

Results: The full day curriculum was designed to demonstrate parent and student interest in youth participation in cancer related activities, community partner engagement, and feasibility of our approach. Students developed a variety of solutions ranging from creation of community-based patient support groups to designing multimedia public awareness campaigns focusing on cancer treatment and risk prevention. 87% of the students felt that their ideas were valued, felt part of the team, and felt comfortable interviewing people. Majority of youth reported they liked learning about cancer. 73% of parents reported interest in their child participating in a program about cancer-related research.

Conclusions: Eliminating health disparities requires a diverse workforce. Findings showed that 6th–9th graders and their parents were interested in engaging in a program focused on cancer-related activities and research. Youth gained new knowledge, community partners helped to design the curriculum and were engaged in bringing youth to the program. The feasibility of the program was illustrated.

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10:30 AM-11:30 AM

HEALTH CARE ACCESS AND IMMIGRATION FACTORS ASSOCIATED WITH KOREAN AMERICAN IMMIGRANT WOMEN'S MAMMOGRAPHY USE IN KOREA

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Background: Korean American immigrant women (KAIW) have lower mammogram screening rates than other racial/ethnic minority women. This has been attributed to limited health care accessibility factors including cost, time-consuming and complicated procedures, and language. Recent evidence suggests that Korean Americans return to their home country to access medical services such as cancer screening and treatments, which may be inaccessible in the US. However, KAIW's mammography use in Korea after their immigration to the US is unknown. In this study we examined health care access and immigration factors associated with KAIW's mammography use in Korea post US immigration.

Methods: Data were obtained from a cross-sectional survey of breast cancer screening behaviors in KAIW. KAIW (N=240), ages 40-79 years, were recruited at various community-based sites such as churches and social service centers in Los Angeles, California, in 2016. Unadjusted and multivariable logistic regression models were used to examine factors associated with KAIW's mammography use in Korea after US immigration. We used SAS® statistical software version 9.4 to analyze data.

Results: Less than a third (28.3%) of KAIW had a mammogram in Korea after immigrating to the US. Also, over two-thirds (69%) of KAIW indicated that they had their first mammogram in the US. Mammography use in Korea after immigration to the US was significantly associated with having first mammogram in Korea (versus the US), year of immigration to the US (after 1999), years living in the US (> 30 years), and type of health insurance (self-purchased insurance and employer-based). Women who had their first mammogram in Korea were more likely to get screened in Korea after they moved in the US (AOR= 0.02, 95% CI: < .001, 0.05). Also, women who had an employer support health insurance were less likely to have a mammogram in Korea after their immigration (AOR= 0.01, 95% CI: < 0.001, 0.18).

Conclusion and Implications: Findings from this study suggest that KAIW who are familiar with the medical system in Korea and have unstable health insurance may seek cancer screening outside of the US. To promote breast cancer screening among KAIW, culturally tailored interventions are needed to address health access barriers. For example, community-based patient navigators and health providers may educate KAIW on accessing free or low-cost screening, and assist in addressing language, transportation and appointment challenges.

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D142

10:30 AM-11:30 AM

CASTING THE NET: WHAT FEATURES DO OLDER CANCER SURVIVORS WANT IN WEB-BASED LIFESTYLE INTERVENTIONS?

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Background: With the growing number of older cancer survivors, it is imperative to optimize the reach of interventions that promote healthy lifestyles. While web-based interventions hold considerable promise for expanding reach of interventions originally delivered in other settings, adapting such interventions for web-based delivery is not easy. We explored cancer survivors' views to guide the design of the web-based Aim, Plan, and Act on Lifestyles (AMPLIFY) Survivor Health diet and exercise program.

Methods: Ten focus groups were conducted with 57 cancer survivors recruited from a cancer registry in the southeastern U.S. Data were analyzed using inductive thematic and content analysis with NVivo 12.

Findings: 29 male and 28 female African-American and Caucasian survivors, mean age 63.7 years shared their views about an ideal web-based healthy lifestyle program for cancer survivors. Six themes emerged related to program content, design, delivery, technology training, engagement and interaction. Participants noted the importance of credible, high quality, and individually-tailored information delivered by health care professionals. Males were more likely to see physicians as a trustworthy information source, females were also receptive to guidance from other survivors. Privacy issues related to participation in Facebook support groups was a common concern; but interactions with other survivors in closed groups was acceptable. Lack of computer skills along with privacy and information quality concerns were potential barriers. Ease of use, appealing design, flexibility and opportunity to interact with other survivors were cited as facilitators of program engagement. Women were willing to spend more time on program activities than men. Physician's recommendation, support by health care providers and families/significant others, along with timely feedback and incentives were perceived as important to motivate participation. Many participants expressed the need for training to use computer and the website preferring individualized help over computer classes. There were variations in frequency and type of feedback about goal achievement. More women wanted frequent feedback via support groups, men preferred text messaging to group discussions.

Conclusions: Important considerations when adapting healthy lifestyle interventions for web-based delivery to diverse cancer survivors include program quality, participants' privacy, ease of use, and a prominent role of the health care provider to enhance engagement.

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10:30 AM–11:30 AM

ACCEPTABILITY OF NARRATIVE VISUALIZATION TECHNIQUES WITH MONITORING PHYSICAL ACTIVITY DATA AMONG BREAST CANCER SURVIVORS

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Background: Breast cancer survivors are at risk for negative health outcomes. Engaging in routine physical activity (PA) can reduce these risks; however, PA levels are low among this population. Integrated regulation, or self-regulation where motivation relates to personal values and identity, is associated with PA over time. Narrative visualization (NV) is a technique that uses drawings, photographs, and text to contextualize PA data, which we hypothesize may facilitate integrated regulation of PA. The purpose of this study was to determine the acceptability of scrapbooking activities as an NV strategy along with standard activity monitoring.

Methods: Breast cancer survivors were given workbooks, wearable electronic activity monitors, instant cameras and film, and art supplies including a variety of stickers (e.g. emojis). Participants used these materials to complete the workbook for 7 days. The workbook pages prompted participants to re-draw their daily activity graphs from the wearable's mobile app, then annotate them with text, photographs, stickers, etc. to reflect what the data meant to them. Thematic analysis was used to analyze the photographs, drawings, and written content from the workbooks to identify emergent themes.

Results: Of the 20 consented women (mean age 67±5 yrs, 45% non-Hispanic white), 2 were lost to follow-up due to medical complications and 1 was unable to complete the procedures due to cultural barriers (preferred to communicate via spouse). The NV procedures using both photos and written prose were universally accepted. Participants took a mean of 9 photos over 7 days (range: 4–10) and completed workbook questions regarding current PA and PA goals. Thematic analysis of photos revealed that participants felt that family had the largest impact on their PA. The written portions of the workbooks discussing goals focused on increasing PA to improve health, spending quality time with family, and time for personal reflection. Weight loss was not a major theme. A balance of positively and negatively themed emoji stickers were used by all participants to portray reactions. Fitness and motivation themed stickers were also commonly used.

Conclusions: The materials provided to the breast cancer survivors allowed them to successfully use NV techniques to reflect on their PA data and behavior. These techniques show promise for promoting integrated regulation in activity monitoring interventions.

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D144

10:30 AM–11:30 AM

FRIENDS AND FUNCTIONING: SOCIAL SUPPORT BUFFERS THE NEGATIVE EFFECT OF SYMPTOMS ON FUNCTIONING IN PATIENTS WITH LUNG CANCER

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Background: Patients with advanced non-small cell lung cancer (NSCLC) experience high symptom burden, which negatively impacts functional status—the ability to perform daily activities needed to maintain an independent lifestyle. Although social support can buffer these negative effects on health, whether this protective effect is beneficial for patients with advanced NSCLC is unknown. This study examined the association of social support and symptoms with functional status among patients newly diagnosed with advanced (stage IV) NSCLC.

Methods: Patients with newly diagnosed stage IV NSCLC (N=186) completed self-report measures of social support (Social Network Index), mental health (PHQ-9 and GAD-7) and physical symptoms (EORTC LC-13 and symptoms questionnaire assessing common cancer-related symptoms), and functional status (EQ-5D-5L). Principal component and exploratory/confirmatory factor analyses of the physical symptom questionnaires identified 5 symptom clusters (respiratory distress, vegetative symptoms, physical distress, nausea/vomiting, and dysphagia/mouth sores). Linear regressions tested the main effect of social support and each symptom on 4 functional status outcomes (total score, mobility, self-care, and ability to perform usual activities). For each symptom, a multiple regression tested social support, symptoms, and their interaction as predictors of functional status after controlling for age, sex, and marital status.

Results: Higher social support was associated with better functioning [total score ($\beta = -.20$; $p < .01$) and improved mobility ($\beta = -.24$; $p < .01$)], while marital status was not ($ps > .07$). Conversely, all mental and physical health symptoms were associated with worse functioning across all functional outcomes ($\beta = .11$ to $.56$; $ps < .05$) with the exception of nausea/vomiting's association with self-care ($p = .13$). Social support significantly moderated the effect of symptoms on functioning. Specifically, the negative effect of symptoms (anxiety and physical distress) on functioning total scores, (depression, anxiety, respiratory distress, and physical distress) on self-care, and (physical distress) on mobility were enhanced in those with lower social support ($ps < .05$).

Discussion: Social support buffers the negative impact of symptoms on functional status in patients with advanced NSCLC at diagnosis, over and above the effect of marital status. Monitoring and developing additional social support among patients may be important to maximize functional outcomes.

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10:30 AM–11:30 AM

STIGMATIZING ATTITUDES OF PRIMARY CARE PHYSICIANS TOWARDS PATIENTS WHO SMOKE: PREVALENCE AND ASSOCIATED FACTORS

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Background: Fear of stigmatization is an obstacle that may prevent patients from seeking, and health professionals from providing, beneficial health care services. A growing number of studies have assessed stigmatizing attitudes among patients and health professionals, but few have examined primary care physicians' stigmatizing attitudes towards patients who smoke. This is an important knowledge gap, given that stigmatizing attitudes may prevent physicians from delivering optimal care.

Objectives: The objectives of the current study were: 1) To describe the prevalence of stigmatizing attitudes among primary care physicians, and 2) To explore factors associated with physicians' stigmatizing attitudes.

Method: As part of a statewide survey aimed at understanding primary care physicians' attitudes towards lung cancer screening, Maine primary care clinicians completed a new 11-item measure of physicians' stigmatizing attitudes towards smokers (the Smoking Stigma Scale for Physicians, SSSP), which assessed physicians' level of agreement with various statements indicating stigmatizing attitudes.

Results: 118 physicians (59% female; 80% practicing physicians; 22% Family Medicine residents) completed the surveys (response rate 15%). The SSSP demonstrated good internal consistency ($\alpha = .814$). Overall, physicians reported a moderate degree of stigmatizing attitudes towards smokers ($M = 2.36$ on a 1–5 scale, $SD = .65$). There was no association between stigmatizing attitudes and either years of practice ($M = 14.40$, $SD = 12.50$) or physician specialty. Physician gender was significantly associated with stigmatizing attitudes; male physicians reported a greater degree of stigmatizing perceptions towards smokers ($M = 2.55$, $SD = .63$) than female physicians ($M = 2.23$, $SD = .58$; $p = .01$, $d = .53$). There was a marginally significant association between bias and physicians' perceived self-efficacy in conducting shared decision making (SDM) counseling for lung cancer screening ($p = .06$); higher smoking bias was associated with lower self-efficacy.

Conclusions: Among primary care physicians, stigmatizing attitudes towards smokers are relatively common and associated with male gender and lower self-efficacy in conducting SDM counseling for patients considering lung cancer screening. Future research should focus on improving the measurement of physicians' stigmatizing attitudes and investigating the causes and consequences of these attitudes.

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D146

10:30 AM–11:30 AM

LIVER CANCER PREVENTION AMONG ASIAN AMERICANS: WHAT WE'VE KNOWN AND WHAT ELSE WE CAN DO?

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Background: Chronic infection of Hepatitis B virus (HBV) is the leading cause of liver cancer. Two thirds of those chronically infected in the U.S. are unaware of their status. Asian Americans (AA) comprise 6% of total U.S. population but make up 60% of those infected. About 10% AA are chronically infected with HBV compared to 0.3% of general U.S. population. In the past two decades, a number of programs have been implemented this health disparity.

Methods: In this study, we first review the existing public health intervention programs of HBV screening and vaccination among AA. Then, based on our decades of working of HBV screening and treatment in AA communities and recent research on their social media and mobile use behaviors, we make recommendation for future research.

Results: We identified more than 50 peer-reviewed publications on liver cancer prevention among AA. Only 15 studies reported HBV screening and treatment, most of these studies were community screening events in major metropolises with large AA populations. Out of those tested, the HBV infection rates ranged from 5% to 33% with a median of 12%. Only four interventions were evaluated with a randomized controlled trial (RCT). Most interventions were community-based programs delivered by lay health workers (LHW). Some recent studies reported reminder prompts on electronic health records (EHR). No study employed digital tools as intervention delivery in spite of the fact that more than 90% AA own smart phones and more than 70% are active on their ethnic specific social media chat applications platforms such as WeChat (Chinese), Kakao Talk (Korean), and Zalo (Vietnamese).

Conclusion: Despite two decades of efforts to address liver cancer disparity among AA, HBV screening and treatment rates remain low. The existing LHW-led community-based behavioral interventions have demonstrated initial efficacy but were limited in reach and impact. The high ownership rate of smart phone and popular social media platforms among AA can be capitalized for more effective interventions, which can be culturally tailored for AA subgroups and personalized to meet individual preferences for optimal program outcomes.

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D147

10:30 AM-11:30 AM

SOCIAL MEDIA RESEARCH: NATIONAL CANCER INSTITUTE FUNDING TRENDS (2004-2019)

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Background: Given the increasing interest in using social media (SM) for health research, as well as efforts at the National Cancer Institute (NCI) to support SM research, an analysis of the NCI extramural grant portfolio in relation to SM research is timely.

Objective: To analyze trends in SM-focused grant applications funded by the NCI between 2004-2019, summarize study characteristics, and identify gaps in the NCI-funded SM research.

Methods: The NIH iSearch system was queried to identify NCI grant submissions from FY04-FY19 with SM-related search terms (e.g. “Web 2.0”, “Twitter”, “Instagram”, “online support group”) in the title or abstract. The search returned a total of 738 new (Type 1) grant submissions, 93 of which were funded. Of the 93 awarded grants, 35 were excluded on abstract review (e.g. because social media was only part of the result dissemination strategy). Of the remaining 58 grants, 24 were not reviewed further because the SM component was deemed insubstantial. The abstracts/specific aims of the other 34 grants were coded for role of social media, topic, cancer continuum stage, theory, platform(s) used, methods, and target population.

Results: Grant submissions mentioning SM increased steadily, from 1 in 2004 to 115 in 2018. However, only an average of 3.4 SM-focused grants were awarded each year between 2009 and 2019 (range: 2-9). Among funded grants, SM was used as a data source in 16 grants, an intervention platform in 9 grants, a component of a larger intervention in 7 grants, and a recruitment strategy in 2 grants. The most frequent topic was tobacco/e-cigarettes (n=14), followed by indoor tanning/sun safety (n=7). Most grants (n=26) focused on the prevention stage of the continuum, and 5 focused on survivorship. Few grants addressed screening, treatment, or end-of-life. Facebook (n=10) and Twitter (n=10) were the most frequently used platforms, with few grants utilizing Instagram, YouTube, Reddit, or Pinterest. 11 grants used a health-specific social networking site (e.g. QuitNet) or a platform developed by the research team. Most grants looked at a general population, with only 7 grants targeting patients/survivors and 4 targeting caregivers/family members. 9 grants focused on younger individuals, 1 grant focused on Latinos, 1 focused on a low-income population, and 1 focused on sexual minority men.

Conclusions: Relatively few SM-focused grants have been funded over the past 15 years in cancer control despite the rising prominence of social media in society and its potential utility for research. Future work should address gaps in current research by focusing on visual platforms (e.g. Instagram), vulnerable populations, different stages of the cancer continuum, and a broader range of cancer risk factors (e.g. diet).

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10:30 AM-11:30 AM

THE SOCIOEMOTIONAL IMPACT OF BLOOD CANCER CAREGIVING: DIFFERENCES IN THE EXPERIENCES OF PARENT AND ADULT CHILD CAREGIVERS

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Introduction: Family caregivers of patients with cancer face many challenges as they integrate the logistical, emotional, and financial pressures of cancer caregiving into their often very busy lives. The experience of caregiving is usually studied in the context of only one type of family relationship, most often spouses or partners. Less attention has been paid to parent/child and adult-child/parent relationships in cancer caregiving or to closely examining how their experiences and needs may differ.

Objective: To examine differences in caregivers' experiences as they care either for children or parents with blood cancer.

Methods: We conducted semi-structured individual interviews with caregivers of parents or children with blood cancer. In order to be included in the study, the parent or child must have completed primary or maintenance therapy in the past 1-18 months. We used a qualitative, thematic analysis process to address our aims.

Results: We interviewed 20 parent caregivers (PC) and 19 adult child (ACC) caregivers of patients with blood cancer. Caregivers ranged in age from 29-64 (mean=43.49). Mean age did not differ significantly based on whether they were a PC or ACC. Five major themes of differences emerged between the two types of caregivers: (1) **Prognosis:** ACCs were less anxious and fixated on cure than PCs. (2) **Disruption:** ACCs described caregiving as more of a disruption to their lives largely centered on changes in their home life. (3) **Role Shifts:** ACCs experienced role shifts or role reversals in caring for their parents, while PCs were already in a caregiving role. (4) **Family Conflict:** ACCs reported conflict with siblings and other family members in the caregiving process, while almost no PCs discussed resentment or frustration with other caregivers. (5) **Transition to Survivorship:** Although participants in both groups described trying to adjust to a “new normal” and getting back to their own activities, ACCs focused on the parent regaining independence as a mark of a transition into survivorship care.

Conclusion: Caregivers have differing experiences with caregiving based upon whether they are caring for their child or their parent. The intergenerational relationship between the patient and caregiver is critical to understanding the caregiving experience and varying needs for supportive services. Caregiver interventions and programs should be tailored according to the age and developmental needs of the patient, with consideration for the intergenerational dynamics of that particular relationship in the family.

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D149

10:30 AM–11:30 AM

CANCER CARE TEAM CORE COMPETENCIES IN MULTIDISCIPLINARY MULTI-TEAM SYSTEMS

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Rapid changes in oncology and the increasing demands of integrative and complementary medicine require multidisciplinary cancer care teams to demonstrate core non-clinical competencies in order to operate effectively and according to shared-decision making principles within complex multiteam systems. Beginning with a comprehensive list of non-clinical team-based competencies from various sources categorized into six domains, a multidisciplinary group of oncology, palliative and primary cancer care professionals and patient and family member advocates refined the list after three consecutive web-based surveys following a modified Delphi study design. After each survey round, statistical and qualitative analytic approaches were applied to refine competency statements, eliminate duplicates, and add missing competencies. Consensus on the top-ranking teamwork competencies was achieved through analyzing competency statements agreed on by 70% of the panel of survey participants.

Of the 227 stakeholders who were invited to participate in the study, 104 consented. Study panelists deemed four domains and 20 associated team-based competencies important for effective coordination in the current cancer care multiteam system. Teamwork competencies related to providing patient-centered care in multiteams were rated highest ($m=4.6$, $SD=.63$), followed by communication competencies ($m=4.25$, $SD=.8$), then competencies related to coordination ($m=4.19$, $SD=.85$) and shared mental models ($m=4.15$, $SD=.76$).

This study advances the knowledge of teamwork competencies required by cross-functional teams in the fragmented multiteam system of cancer care delivery embracing integrative and complementary medicine goals. Findings may be of interest to developers of IPE team-based trainings for medical education curricula and workforce training. More research is needed to understand how frequently to train, what modes and methods of training are acceptable for clinical staff of various disciplines, and how to also train patients to participate in the coordination of their care.

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10:30 AM–11:30 AM

THE ROLE OF THE MYC GENE EXPRESSION PATHWAY ON THE EFFICACY OF SOYBEAN VS. FISH OIL ON CANCER-RELATED FATIGUE IN CANCER SURVIVORS

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Background: Cancer-related fatigue (CRF) affects the majority of cancer survivors. We previously showed greater alleviation of CRF with soybean vs. fish oil supplementation, though the mechanism remains unclear. Myc is a transcription factor that regulates dozens of genes involved in mitochondrial energy production and is notoriously upregulated in cancer. We investigated whether soybean vs. fish oil led to differential effects on Myc gene expression that could explain the efficacy of soybean oil to alleviate CRF in breast cancer survivors.

Methods: In a phase II nationwide randomized controlled trial in the NCI Community Oncology Research Program (NCORP) network, female breast cancer survivors 4–36 months post-treatment with self-reported CRF $\geq 4/10$ were randomized to daily supplementation with 6 g soybean oil, 6 g fish oil, or 3 g of each for 6 weeks. CRF was assessed using the Functional Assessment of Cancer Illness Therapy-Fatigue; gene expression was assessed in peripheral blood using RNASeq at baseline and post-intervention. 58 Myc target genes were identified using molecular signatures (MSigDB), and patterns in Myc target gene expression were captured in a composite term using Principal Component Analysis (PCA; the first component accounted for at least 90% of variance and was used as the “gene expression” variable going forward). Linear regression models were used to explore the relationship between changes in patterns of gene expression and changes in CRF. $p \leq 0.05$ was deemed significant and the Benjamini-Hochberg procedure was used to account for multiple comparisons.

Results: Participants ($n=70$) were 61 ± 9 years old. Patterns of Myc target gene expression were correlated with change in CRF only for patients randomized to receive soybean oil (gene expression*arm interaction, $p = 0.009$, $\beta \pm SE = 1.11 \pm 0.56$); the strength of this relationship weakened with increasing dose of fish oil. When we probed individual genes, we observed that soybean vs. fish oil led to significant downregulation of 19/58 genes pre- to post-intervention, no significant change in 39 genes, and significant upregulation in no genes (adjusted $p < 0.05$). Similarly, there was a significant positive correlation between blood omega-3 concentration and gene expression of 31/58 Myc target genes at post-intervention and no significant negative correlations (Spearman's ρ values = 0.27–0.62; adjusted $p < 0.05$).

Conclusions: Soybean oil broadly downregulated Myc target gene expression, and patterns of expression were correlated with CRF in this group. Thus, these data suggest that soybean vs. fish oil was associated with deactivation of the Myc signaling pathway and contributed to alleviation of CRF, while fish oil potentially interfered with this relationship. Future research is needed to confirm these observations, though Myc signaling could serve as a promising therapeutic target to treat CRF.

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10:30 AM–11:30 AM

PATIENT ACTIVATION: A CLOSER LOOK AT THE DIMENSIONS OF THE CONSTRUCT

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Background: Patient Activation (PA) represents engagement in one's health and health care. The Patient Activation Measure (PAM) was designed to assess stages of PA: 1) Belief in an Active Role, 2) Knowledge and Confidence; 3) Taking Action/ Maintaining Behaviors. This study was designed to examine these stages of activation by focusing on construct validity and psychological processes such as intentions and efficacy to engage in healthy behaviors. We hypothesized a 3-factor solution for the PAM-13, based on prior research, and positive relationships with hope, medical information seeking, maintaining an active lifestyle and negative relationships with anxiety and depression. Furthermore, we anticipated that intentions to perform a health behavior and the efficacy to do so would be highly correlated with Factor 3.

Methods: 76 persons with a cancer diagnosis completed a questionnaire that contained the PAM-13, the Hope Scale, measures of anxiety and depression (HADS), Self-Efficacy for Seeking Medical Information and Self-Efficacy for Maintaining Activity (from the Cancer Behavior Inventory), composite measures of intentions and self-efficacy for engaging in a healthy diet and exercise.

Results: Maximum Likelihood factor extraction and Promax rotation on the PAM-13 yielded 3 factors (F1, F2, F3) that corresponded to the three stages of PA (R²=62%), essentially confirming the conceptual structure of the PAM. Correlations of the factors with Hope Goals (F3:r=.314,p<.01), Hope Pathways (F3: r=.364, p<.01), Seeking Medical Information (F1:r=.353;F2:r=.403; F3:r=.394, ps<.01), Maintaining Activity (F1:r=.223;F2:r=.297;F3:r=.482, ps<.01), Anxiety (F3:r=-.295,p<.01), Depression (F2:r=-.300;F3:r=-.395, ps<.01), provided support for the construct validity of the PAM with the strongest relationships on Factor 3. Regression analyses were computed with the three PAM factors as predictors and 1) a composite of intentions to engage in a healthy diet and exercise and 2) a composite of self-efficacy for diet and exercise behaviors were criterion variables. For both intentions (F3:B=.305;95% CI: .070, 1.284) and self-efficacy (F3:B=.308;95% CI: .318, 2.823) only Factor 3 was a significant predictor.

Conclusions: The results support the structure and construct validity of the PAM in that seeking medical information and maintaining an active lifestyle were related to all three factors of the PAM and depression was related to F2 and F3. However, for anxiety, hope, intentions to engage in healthy behaviors and efficacy to do so, only F3 was a significant predictor. Therefore, overall, Factor 3, which focuses on what appears to be resilience, is the most potent factor in terms of prediction in the current study. More work needs to be conducted to evaluate the nomological net in which PAM resides, the differential predictive power of the factors, and the role of resilience in patient activation.

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10:30 AM–11:30 AM

ACCEPTABILITY, FEASIBILITY, AND PRELIMINARY EFFECTS ASSOCIATED WITH USE OF A UVR EXPOSURE MONITORING DEVICE AMONG CHILDREN

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Ultraviolet radiation (UVR) exposure is the primary modifiable risk factor for skin cancer. Skin cancer preventive behaviors, including use of sunscreen and protective clothing and reduction of UVR exposure, sunburns, and intentional tanning, help to decrease risk for skin cancer. Reducing sunburn during childhood is particularly critical, because occurrence of a severe sunburn in childhood nearly doubles one's risk for developing melanoma, the deadliest type of skin cancer. Objective measurement of UVR exposure is critically needed to measure outcomes of skin cancer preventive interventions. However, there are few UVR monitoring devices available, and little is known about the impact of UVR monitoring on implementation of skin cancer preventive behaviors (e.g., potential reactivity to UVR monitoring). The current study sought to test the feasibility and acceptability of an innovative UVR monitoring device among children. In addition, we evaluated potential effects on children's skin cancer preventive behaviors associated with use of the UVR monitoring device.

Participants were 25 parent-child dyads (parent mean age=42.8 years, SD=5.3, 72% female; child mean age=12.8 years, SD=2.3, 72% female). Children wore the UVR monitoring device ("My UV Patch") for three consecutive days and reported on device feasibility and acceptability. Parents and children also reported on child sun protection habits at prior to and at conclusion of the monitoring period. Descriptive statistics were used to summarize acceptability and feasibility outcomes. Paired-samples t-tests were conducted to assess within-subjects change in sun protection habits from baseline to follow-up.

The majority of children reported that the device was comfortable (64%), easy to wear (80%), and did not limit participation in regular activities (76%). Participant-reported adherence to wearing the device for the complete 3-day monitoring period was high (96%). No significant differences were detected in child- or parent-reported child sun protection habits from baseline to follow-up.

The UV monitor used in the current study appears to be a feasible and acceptable method for measuring UVR exposure in children. There was no evidence of reactivity effects associated with UVR monitoring. Objective UVR monitoring devices could be employed in intervention studies in order to objectively measure UVR exposure, and may not interfere with detection of sun protection behavior-related intervention effects.

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D153

10:30 AM-11:30 AM

DOES THE QUALITY OF PATIENT-PROVIDER COMMUNICATION INFLUENCE THE QUALITY OF LIFE AMONG RURAL CANCER SURVIVORS?

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Background: Rural cancer survivors experience higher mortality and a lower overall quality of life (QOL) compared to urban cancer survivors. While there are various reasons for these disparities, recent studies have suggested that differences in patient-provider communication quality (PPCQ) may be one contributing factor. Poor PPCQ among cancer survivors, has been associated with limited shared decision making, particularly regarding treatment-related decisions. This in turn can contribute to poorer long-term QOL among rural cancer survivors. An improved understanding of the relationship between PPCQ and the QOL among rural cancer survivors will contribute to strategies to reduce rural cancer disparities.

Purpose: To explore the relationship between PPCQ and four health-related QOL domains among rural cancer survivors: social well-being, functional well-being, mental health, and physical health.

Methods: Data was derived from the Illinois Rural Cancer Assessment (IRCA) Study. Participants completed surveys between January 2017-September 2018 via phone, internet, or paper-based surveys. QOL was measured with two instruments: FACT-G and SF-12 and PPCQ was assessed with the Medical Expenditure Panel Survey's (MEPS) Experience with Cancer Care instrument. Self-reported PPCQ was modeled as a predictor in separate adjusted linear regression models for each QOL outcome. All univariate and multivariable linear analyses were conducted using SPSS version 25.

Results: Of the 139 study participants, the fully adjusted models revealed a positive association between PPCQ and two QOL domains based on the FACT-G tool: social well-being ($\beta=0.19$, CI: 0.03, 0.36) and functional well-being ($\beta=0.20$, CI: 0.04, 0.34). No associations were observed between PPCQ and physical health or mental health-related QOL.

Conclusion: Findings from this study provide evidence that the PPCQ is important for improving both the social well-being and functional well-being among rural cancer survivors. These findings encourage future researchers and healthcare providers to work to develop strategies for improving communication with rural cancer survivors. Improvements in PPCQ within rural cancer survivor populations, promises to contribute to better patient QOL in terms of social well-being and functional well-being.

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D154

10:30 AM-11:30 AM

PRELIMINARY RESULTS FROM THE MYCHOICE STUDY TO IMPROVE INFORMED DECISION MAKING IN CLINICAL TRIAL PARTICIPATION

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Background: *mychoice*, a novel web-enabled communication tool designed to improve informed decision making about clinical trials, used a systematic approach with patients from diverse backgrounds (especially given the limited participation of racial and ethnic minorities) and providers from concept to prototype development to user testing. Our preliminary results from the randomized study at 4 cancer centers indicate that patients find the tool helpful in their decision making process.

Methods: A mixed methods approach, including interviews, surveys, perceptual mapping analysis, and user prototype testing guided the development of *mychoice* including information about the value of clinical trials and addresses concerns through patient testimonials and an interactive communication aid. It is now being evaluated in an RCT to determine patient satisfaction and its impact on decisional conflict and self-efficacy in talking with their provider. Participants in the RCT complete a baseline survey, are randomized to either the *mychoice* tool or standard materials on clinical trials. Immediately upon using the tool, patients are asked to provide feedback on its decision making value (Ottawa Preparation for Decision Making Scale-PREP-DM) and additional satisfaction and usage questions at one month follow-up.

Results: Participants (161 out of 270 goal) in the RCT represent a diverse population (43% are African American, 67% female, 30% less than a HS education). Almost all (94%) of those receiving *mychoice* stated that the tool was somewhat or very helpful, would recommend it to others (94%), was clear (90%). We found that African American participants also rated the tool highly. Of the 10 items in the PREP-DM, over half of the African American patients stated it helped them to recognize that a decision needs to be made, it prepared them to make a better decision, helped them think about the pro's and con's. Over 2/3 indicated that the tool helped them to personalize the pro's and con's, organize their thoughts, think about how involved they wanted to be in decision making and identify questions to ask their doctor. Similar results were seen in the total sample. Study accrual will be complete by the end of 2019, and results exploring patient satisfaction, perceived benefit in decision making, and feedback on specific element of *mychoice* as well as differences among White and African American patients will be presented.

Discussion: Using rigorous formative evaluation and mixed method approaches to guide the development of clinical trials decision tool to ensure its salience to culturally diverse patients is critical and our preliminary results indicate that the *mychoice* communication tool is highly rated and perceived to be impactful in the decision making process by both African American and White patients participating in our RCT.

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D155

10:30 AM-11:30 AM

DEPRESSION AND INFLAMMATION AMONG LESBIAN, GAY, AND HETEROSEXUAL CANCER SURVIVORS: TESTING TWO EXERCISE INTERVENTIONS

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Background: Our previous research shows that lesbian/gay (LG) cancer survivors experience higher rates of depression than their heterosexual counterparts, and that standardized aerobic and resistance exercise (EXCAP[®], Exercise for Cancer Patients) is efficacious in improving depression and inflammation associated with depression in heterosexual survivors. We conducted a pilot cancer control trial testing whether the benefit of exercise on depression extended to both LG and heterosexual survivors, and whether inclusion of caregivers (CGs) enhanced effects on depression and inflammation.

Methods: In this pilot trial, 20 LG and 22 heterosexual survivors and their CGs were randomized as dyads to: Arm 1) dyadic exercise, involving both survivor and CG; or Arm 2) survivor-only EXCAP[®]. Depression symptoms (CES-D) and cytokines (serum IFN- γ , IL-6, IL-8, IL-10) were measured at baseline and post-intervention (6 wks later). We used t-tests to assess baseline disparities, ANCOVA to assess the effect of dyadic vs. survivor-only exercise on depression and inflammation, and Pearson correlations to assess mechanistic associations between changes in depression and inflammation.

Results: At baseline, LG survivors reported higher depression ($t=-2.23$, $p=0.04$), higher IL-6 ($t=-2.53$, $p=0.02$), and higher IL-8 ($t=2.37$, $p=0.03$) than heterosexuals. Among both LG and heterosexual survivors, dyadic exercise significantly improved depression relative to survivor-only exercise ($M=-5.17$, vs. $M=2.43$; $p=0.02$). Decreases in depression were associated with decreases in IL-6 ($r=0.40$, $p=.03$) and IL-8 ($r=0.39$, $p=0.04$) in both exercise groups; in analyses by sexuality group and intervention, these associations were significant only among LG survivors in the dyadic exercise condition.

Conclusions: This study replicates previous research showing disparities between LG and heterosexual survivors and offers preliminary support for the use of exercise in general and dyadic exercise in specific for reducing depression among LG and heterosexual survivors. It suggests a biological mechanism by which this improvement occurs, namely by reducing systemic inflammation. Confirmatory research is needed to replicate these findings in larger samples of LG cancer survivors.

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D156

10:30 AM-11:30 AM

PATIENT-REPORTED PSYCHOLOGICAL AND PHYSICAL RISK FACTORS FOR ANXIETY AND DEPRESSION IN STAGE IV NON-SMALL CELL LUNG CANCER

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Background: Of all cancers, lung cancer is associated with the highest levels of anxiety and depression, which may impact quality of life and survival. It is important to continually identify and assess for significant risk factors in patients with lung cancer at diagnosis, prior to treatment. This study examined possible risk factors in patients with non-small cell lung cancer (NSCLC) at diagnosis and their associations with anxiety and depression at baseline, controlling for previously empirically supported risk factors.

Methods: Patients with stage IV NSCLC ($n=186$) completed self-report measures relating to anxiety, depression, traumatic life events, social network, hopelessness, illness perceptions, cancer-related stress and symptoms, and general health at diagnosis through a phone interview. To determine covariates, correlations were run between empirically supported psychological, medical, and demographic risk factors for anxiety and depression in cancer patients and the GAD-7 for anxiety and PHQ-9 for depression. Those found significant (i.e. personal or family history of a psychiatric diagnosis, high school education, income, and marital status) were controlled for in the analyses. Multiple linear regressions were used to determine the relationships between the possible risk factors and anxiety and depression scores.

Results: Nine percent ($n=19$; $M=5.42$, $SD=5.26$) and 5.1% ($n=15$; $M=6.49$, $SD=5.23$) of patients reported severe anxiety and moderately severe depressive symptoms, respectively. For anxiety, life events ($\beta=.105$, $p=.001$), total cancer-related stress ($\beta=.528$, $p<.001$), and vegetative symptoms (fatigue, weakness, appetite, and sleep disturbance; $\beta=.183$, $p<.001$) were significantly associated. For depression, social support ($\beta=-.136$, $p=.017$), hopelessness ($\beta=.132$, $p=.028$), total cancer-related stress ($\beta=.399$, $p<.001$), vegetative symptoms ($\beta=.380$, $p<.001$), swallowing and soreness of the throat ($\beta=.168$, $p=.001$), and the identity (i.e. how a patient labels their illness; $\beta=.120$, $p=.051$) and control (i.e. how much control a patient feels they have over their illness; $\beta=-.094$, $p=.301$) components of the Brief Illness Perceptions Questionnaire were all significantly associated.

Conclusions: Analyses demonstrated previously unidentified psychological and patient-reported associations with anxiety and depression in a sample of patients with NSCLC. There should be heightened awareness of these variables in cancer patients after diagnosis and before treatment in order to protect against possible anxiety and depressive symptoms.

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D157

10:30 AM–11:30 AM

NATIONAL TRENDS IN CANCER SURVIVORS SUN PROTECTIVE BEHAVIORS IN THE US.

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Background: Previous research investigating the health behaviors of cancer survivors have looked across several domains (e.g. physical activity, smoking etc.; Bellizzi et al., 2005). However, this research did not examine behaviors related to sun exposure. Skin cancer is one of the most common cancers, and in 2019 over 11,000 deaths were attributed to it (American Cancer Society, 2019). The purpose of the current research is to examine sun safety behaviors in cancer survivors and controls.

Method: Data related to sunscreen use, indoor tanning and sunburn were taken from the National Health Interview Survey (NHIS) over three time points (2005, 2010, 2015). There were 92,257 participants whose cancer status was obtained via self-report (e.g., “Have you ever had cancer?”). 8,050 participants reported having had cancer (2,428 in 2005; 2,333 in 2010; 3,289 in 2015). The data were weighted, and odds ratios were calculated using logistic and multivariate regressions in SPSS.

Results: When comparing cancers survivors to those without a history of cancer across time points, cancer survivors were more likely to report regular sunscreen use ($OR = 1.50$, $CI = 1.41, 1.59$) and less likely to engage in indoor tanning ($OR = 0.81$, $CI = 0.69, 0.94$). Significant differences were not found for the likelihood of reporting a sunburn among cancer survivors compared to controls. Examining health behaviors for cancer survivors across time (2005–2010 and 2010–2015) demonstrated a significant decrease in sunburns reported from 2010 to 2015 ($p = .025$) and a significant increase in sunscreen use reported from 2010 to 2015 ($p = .043$). No other significant changes were found across time among skin protection behaviors for cancer survivors.

Conclusions: Findings reveal that cancer survivors are more likely to use sunscreen and less likely to engage in indoor tanning. Consistent with national surveillance findings, cancer survivors were no less likely to report being sunburned. More research is needed to determine why this is the case, but it's likely that uptake of sun protective practices in addition to sunscreen may be required, and that cancer survivors may not use appropriate amounts of sunscreen or apply as recommended. This research expands on previous research by examining the sun safety behaviors of cancer survivors. It demonstrates that while cancer survivors are nominally engaging in sun protective behavior, resources may be needed to advance sun protection in this group who are at increased risk for skin cancer.

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D158

10:30 AM–11:30 AM

PREDICTORS OF FATIGUE AND VIGOR IN ASYMPTOMATIC STAGE B HEART FAILURE PATIENTS

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Background: Heart failure (HF) patients experience fatigue with the progression of the disease. Lifestyle behaviors such as being physically active, adequate sleep, healthy eating and emotional well-being may play a role in the perception of fatigue and vitality. Our aim was to explore the role of mood and physical activity as predictive factors of fatigue and vitality.

Methods: A cross-sectional analysis of 327 asymptomatic Stage B HF patients. We used descriptive statistics to characterize the sample and created adjusted multiple regression models to predict the dimensions of fatigue and vitality (as assessed with the Multidimensional Fatigue Symptom Inventory – short form (MFSI-sf) questionnaire). The significance was set at $p \leq 0.05$.

Results: The cohort's mean age was 66.1 (10.2) years (Caucasians (77.6%) and males (95.3%) were predominant). Patients' mean BMI was 30.1 (5.3) kg/m² and ejection fraction was 64.6% (9.0), with most patients having left ventricular (LV) enlargement within normal limits (97.7%). 70.5% had LV diastolic dysfunction. Statins were the most prevalent medications (60.3%). Predictors in the regression models for general fatigue and mental fatigue explained approximately 30% of variance (Adjusted R² = 0.297 and 0.341, respectively), with poor sleep ($\beta = 0.24$, $p = 0.02$) and depression ($\beta = 0.37$, $p < 0.001$) significantly predicting general fatigue, while IL-6 ($\beta = -0.47$, $p = 0.04$) and depression ($\beta = 0.35$, $p < 0.001$) significantly predicted mental fatigue. Better sleep ($\beta = -0.22$, $p = 0.01$) and less depressive mood ($\beta = -0.36$, $p < 0.001$) significantly predicted vigor (Adjusted R² = 0.431). Depression ($\beta = 0.44$, $p < 0.001$) was the only significant predictor for emotional fatigue (Adjusted R² = 0.447), while poor sleep and depression were significant predictors for physical fatigue (Adjusted R² = 0.339; $\beta = 0.30$, $p = 0.001$ for sleep and $\beta = 0.30$, $p < 0.001$ for depression) and total fatigue (Adjusted R² = 0.536; $\beta = 0.86$, $p = 0.01$ for sleep and $\beta = 1.82$, $p < 0.001$ for depression).

Conclusion: Our models explained more than 50% of variance for total fatigue. Surprisingly, physical activity was not an important predictor in our models. In contrast, depressive mood and poor sleep were strong predictors for different domains of fatigue and vitality in this cohort of heart failure patients.

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D159

10:30 AM-11:30 AM

NON-CONGRUENCE BETWEEN PATIENT, FAMILY CAREGIVER AND PROVIDER PERCEPTIONS OF CONGESTIVE HEART FAILURE

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Background: Congestive Heart Failure (CHF) is a debilitating condition affecting nearly 6.5 million adults in the US, with 5-year mortality about 50%. Both light and moderate-vigorous physical activity (PA) reduces risk of hospitalization and mortality. Patients often experience symptoms of shortness of breath, fatigue, and chest pressure, which are exacerbated by PA due to de-conditioning, rather than decompensation of underlying heart function. Patients' perceptions of symptoms, expectations re chronicity and controllability, may influence treatment adherence. Congruence between provider assumptions of patients' perceptions and what the patients actually believe, should facilitate adherence and maintenance of self-management behaviors. The goal of this project was to assess agreement among patient, family and providers regarding the patients' perceptions of CHF symptoms and illness management.

Methods: Participants were recruited from a Heart and Vascular Clinic at a tertiary academic medical center. A research team member administered the brief Illness Perception Questionnaire (IPQ) adapted for CHF to patients and family members and their providers completed an on-line survey asking how their patients perceived the disease. Demographics and additional information on provider practices in recommending PA were collected.

Results: 39 patients, 23 family members and 46 providers (32 MDs, 11 NPs, and 2 PAs; in practice an average of 12.8 years) participated. Patients and family members shared similar perceptions of CHF chronicity (8.86 on scale of 1-10, 10=it will last all their life), controllability (moderate), effect on daily life (moderate negative), degree of understanding (moderate). They differed on intensity of daily symptoms (family perceived patients as more symptomatic, z score=-3.73, $p=.0002$) and helpfulness of treatment (patients rated treatment as moderately effective, but more helpful than family, $z=2.94$, $p=.003$). Providers differed from patients and caregivers on almost all measures: they thought patients had less understanding ($z=3.99$, $p<.0001$), less insight about chronicity ($z=4.92$, $p<.0001$), and less control of CHF ($z=2.93$, $p=.003$). Although providers rated PA as extremely important for CHF management, only 8% reported focusing on PA during clinic visits, compared to 54% who focused on medication.

Conclusions: To improve patient self-management, providers need to develop more accurate perceptions of patient and family perceptions of CHF symptoms and their expectations of treatment efficacy.

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10:30 AM-11:30 AM

LOW RESILIENCE IS ASSOCIATED WITH POORER PSYCHOLOGICAL RECOVERY IN WOMEN WITH ACUTE MYOCARDIAL INFARCTION

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Introduction: Myocardial infarction (MI) may be experienced as a traumatic event. Psychological resilience can protect patients from developing depression and stress disorders following trauma. However, little is known about the role of resilience in women's recovery post-MI. In this study, we examined associations between trait resilience levels and depressive symptoms and perceived stress during the first six months of recovery following MI.

Methods: The sample included participants enrolled in an ongoing multicenter, observational cohort study of women with MI as of August 2019. During or shortly after MI hospitalization (baseline), 373 participants completed validated measures of trait resilience (Brief Resilience Scale), stress (Perceived Stress Scale [PSS-4]) and depressive symptoms (Patient Health Questionnaire [PHQ-2]). The PSS-4 and PHQ-2 were repeated 2-months ($n=288$ to date) and 6-months post-MI ($n=38$ to date). Published cutoffs were used to define low resilience (BRS < 3), high stress (PSS-4 ≥ 6) and high depressive symptoms (PHQ-2 ≥ 2). Pearson correlation coefficients and chi-square tests were performed to examine associations between resilience, stress and depression at each time point.

Results: The 373 participants had a mean age of 62.8 years ($SD=13.2$) and included 39.1% racial or ethnic minorities. About one-quarter (23.4%) demonstrated low resilience at baseline. At the baseline, 2-month and 6-month time points, the prevalence of elevated depressive symptoms was 40.8%, 41.7% and 21.1%, respectively, and the prevalence of elevated stress was 57.4%, 42.4% and 39.5%, respectively. Lower BRS scores were associated cross-sectionally with higher stress ($r=-.503$, $p<.001$) and higher depressive symptoms ($r=-.409$, $p<.001$). Women with low (versus normal or high) resilience were more likely to have high stress (63.5% vs. 36.4%, $p<.001$) and high depressive symptoms (60.0% vs. 36.7%, $p=.013$) 2-months post-MI, as well as 6-months post-MI (80.0% vs. 25.0%, $p=.002$ [stress]; 40.0% vs. 14.3%, $p=.087$ [depression]).

Conclusions: To our knowledge, this is the first study to examine effects of psychological resilience on stress and depression over time in MI patients. Women with lower resilience were more likely to have clinically significant levels of stress and depression up to 6 months post-MI. These findings suggest that psychosocial interventions that enhance resilience may improve outcomes in women with MI.

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D161

10:30 AM–11:30 AM

THEMATIC ANALYSIS OF ATTITUDES TOWARD CARDIOLOGY TELEHEALTH AMONG IN-PERSON AND TELEMEDICINE VETERAN PATIENTS

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Cardiology telehealth (telecardiology) provides an efficient, cost-effective approach for delivering patient care to rural populations, often surmounting barriers like staffing shortages, transportation, and time. Patient attitudes toward telecardiology are an important determinant for its dissemination. This study sought to examine attitudes toward telecardiology among traditional in-person cardiology patients and those using telecardiology using qualitative methods.

The Cardiology Clinic vs. Telemedicine popUlation Satisfaction (CACTUS) project recruited a convenience sample of veterans who were receiving care from the same outpatient provider team via in-person cardiology at a metropolitan clinic ($n=190$, 5 female, median age range = 65–74 years) or at rural telecardiology clinics ($n=110$, 4 female, median age range = 65–74 years). After services, patients were asked to write their attitudes toward telecardiology using the following prompts: In-person: “Are you interested in cardiology telemedicine visits?” (yes, no, undecided), “Why, or why not?” (free response); Telecardiology: “Would you recommend cardiology telemedicine clinics to a friend?” (yes, no, undecided), “Why or why not?” (free response). This data was coded by two coders, blinded to condition, using an adaptive theoretical approach. First, both coders independently coded categories and later reconciled themes through discussion. This agreed-upon coding system included 16 codes, and was applied to all participant responses, with discrepancies resolved through discussion. High-frequency codes included: positive and negative attitudes toward telecardiology, positive attitudes toward in-person cardiology, desire for face-to-face contact, rapport, quality, travel, time, and lack of information. A thematic analysis was conducted, yielding the following: in-person cardiology patients expressed concern about losing in-person contact with their providers, distrust of technologically provided care, and concerns about reduced quality or personalization to their care. Conversely, telecardiology patients expressed satisfaction with the personalization, convenience, time and cost-effectiveness, and ability to access services. These findings demonstrate attitudinal barriers to the dissemination of telecardiology among current face-to-face patients despite positive reports from those receiving telecardiology services. Results also indicated that telecardiology patients' own experiences may speak to the concerns of patients who have not experienced telecardiology before. These findings may guide future telecardiology education, and the presentation of telecardiology materials for continued adoption among the rural Veteran population.

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10:30 AM–11:30 AM

GETTING TEENS WITH CONGENITAL HEART DISEASE TO MOVE MORE: BASELINE FINDINGS OF A RANDOMIZED CLINICAL TRIAL

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Objective: As more congenital heart disease (CHD) survivors reach adulthood, mortality and morbidity due to preventable comorbidities are of increasing concern. The aim of the CHD Physical Activity Lifestyle (CHD-PAL) randomized clinical trial is to evaluate a PA lifestyle intervention, grounded in the Theory of Planned Behavior, that uses coaching via videoconferencing to increase moderate-to-vigorous PA (MVPA), decrease sedentary behavior, and improve exercise tolerance among high school teens with moderate and complex cardiac lesions. The current study reports baseline results for study outcomes, as well as associations between the outcomes and proposed mechanisms of behavior change targeted by the intervention.

Methods: At baseline for the CHD-PAL trial, 70 teens ($M_{age}=16$, $SD=1.0$, range 15–19; 62% male; 82% Caucasian) consented to wear an accelerometer (Actigraph wGT3X-BT) around the waist for 4–7 days (MVPA, sedentary behavior), perform an exercise stress test (VO_{2max}), and complete an online survey. The online survey included measures pertaining to the proposed mechanisms of change, based on the Theory of Planned Behavior, including attitudes towards PA (Benefits and Barriers to PA), social norms for PA engagement (Family and Friend Support for PA), and self-efficacy for PA.

Results: Average time spent daily in MVPA was 23.0 minutes ($SD=16.0$, range 0–69.5) and 633.9 minutes for sedentary behavior ($SD=186.7$, range 310.5–1190.9). The average VO_{2max} was 36.9 ($SD=9.7$, range 18.9–58.1). Only 3 teens exceeded the recommended federal guidelines for MVPA of 60 minutes per day. 40% of teens currently played an organized sport, 22% previously play a sport, and 38% had never played a sport. Higher levels of MVPA were associated with fewer barriers to PA ($r=-.32$), more family ($r=.44$) and friend ($r=.41$) support for PA, and greater self-efficacy for PA ($r=.35$). Similarly, a higher VO_{2max} was associated with fewer barriers to PA ($r=-.59$), more family ($r=.37$) and friend ($r=.35$) support for PA, and greater self-efficacy for PA ($r=.57$). Sedentary behavior was not associated with the proposed mechanisms of behavior change.

Conclusions: The vast majority of teens enrolled at baseline for CHD-PALS did not meet federal guidelines for MVPA despite 40% currently playing a sport. The proposed mechanisms of change were significantly correlated with the primary study outcome, as well as a secondary medical outcome, suggesting appropriate targets were identified.

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10:30 AM-11:30 AM

THE PSYCHO-SOCIAL-SPIRITUAL EFFECT OF EXPRESSIVE ARTS-BASED INTERVENTION ON PRE-ELDERLY STROKE SURVIVORS: A PILOT STUDY

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Introduction: Stroke is a severe cerebrovascular disease which may cause profound physical impairments and affect the daily functioning of stroke survivors. While restoring functional ability is critical in stroke rehabilitation, addressing the psychosocial and/or spiritual needs are crucial for achieving a holistic and comprehensive recovery. This study aims to provide psycho-social-spiritual support via Expressive Arts-based Intervention and explore the psycho-social-spiritual effects of the intervention on young and pre-elderly stroke survivors in Hong Kong.

Methods: Stroke survivors were recruited from a day rehabilitation center and in the community. Recruited survivors were 30 adult stroke survivors (33 - 65 years old) who experienced a stroke episode from two months to 16 years before. After obtaining the informed consents, participants were randomized into the intervention (N = 18) and control group (N = 12). The Expressive Arts-based Intervention consisted of 1.5 weekly sessions for eight consecutive weeks. The intervention applied multiple art modalities to provide an opportunity for stroke survivors to express and transform complex feelings after stroke. Outcome measures on hope, anxiety, depression, stress, social support, quality of life, spiritual well-being, and cognitive functioning, were assessed by self-administrated questionnaires before and after the intervention.

Results: Nonparametric tests were adopted for data analysis. Mann-Whitney U tests revealed no significant differences between the intervention and control groups at the two assessment time-points. Wilcoxon signed-rank tests showed significant increases in the levels of social support from friends ($Z = 2.183$, $p = .029$), cognitive functioning ($Z = 2.504$, $p = .012$), and a marginally significant increase in the physical component of quality of life ($Z = 1.888$, $p = .059$) in only the intervention group across the two time-points.

Conclusions: These preliminary results demonstrated that the Expressive Arts-based Intervention may enhance the levels of social support, quality of life, and cognitive functioning of young and pre-elderly stroke survivors. A larger sample size is needed to validate the above effects. Apart from the limited sample size, future studies should attempt to take into account other contextual factors such as the timing of providing these psychosocial supports and the differences between stroke survivors with different affected body sides and levels of impairments.

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Keywords: stroke, expressive arts, psychosocial well-being, rehabilitation

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10:30 AM-11:30 AM

PSYCHOLOGICAL CORRELATES OF CARDIOVASCULAR DISEASE: IMPROVING PREDICTIVE CAPABILITIES OF A STROKE RISK CALCULATOR

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Introduction: Psychological distress is commonly comorbid with cardiovascular disease (CVD) but is often overlooked as a formal predictor or modifier of increased disease burden. Symptoms of depression, anxiety, and stress are routinely associated with increased arrhythmic burden, which can increase ischemic stroke risk. Overall, behavioral medicine providers recognize the importance of screening for psychological stress as a way to reduce disease burden and progression; however, this same recognition is not always present in medical providers. Therefore, the addition of psychological variables to a well-established cardiovascular stroke risk calculator (CHA₂DS₂-VAsC) could help to increase medical provider initiated screening and management of psychological distress in cardiology patients.

Methods: Participants (N = 157) were approached at pharmacies in Eastern North Carolina. Participants completed demographic and medical history questionnaires, the DASS-21, and were administered a single-lead mobile-ECG (mECG). All mECG readings were categorized as 'Normal' or 'Abnormal' by the mECG device, and medical referrals were provided when indicated. Binary logistic regression modeling was utilized to investigate the capability of the CHA₂DS₂-VAsC stroke risk calculator to predict abnormal mECG readings both with and without the addition of DASS-21 symptom scores.

Results: The CHA₂DS₂-VAsC stroke risk calculator was strengthened significantly by the addition of the DASS-21 symptom scores as evidenced by an increase in the chi-squared statistic, $\chi^2(10, N = 157) = 37.705$, $p < .001$ and reduction in -2 Log likelihood (157.29 to 138.317). In this model inclusive of all three psychological endpoints, the variables of hypertension ($p < .05$, $OR = 3.428$), sex ($p < .01$, $OR = 4.149$), and anxiety ($p < .001$, $OR = 1.235$) were the most significant predictors of abnormal mECG readings.

Discussion: The CHA₂DS₂-VAsC calculator is the current gold standard of ischemic stroke risk prediction. Despite burgeoning evidence of a complex relationship between the heart and mind, psychological distress remains overlooked as an independent risk factor for CVD by medical providers. This findings suggest that the CHA₂DS₂-VAsC calculator may be improved by the addition of a psychological symptom composite score.

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RESPONSIVENESS OF NAUSEA TO INTERNET-BASED COGNITIVE BEHAVIORAL THERAPY IN YOUTH WITH FUNCTIONAL ABDOMINAL PAIN

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Objective: Nausea and abdominal pain frequently co-occur in youth with functional abdominal pain (FAP). Nausea and abdominal pain are similar in that both symptoms result from dysfunction in the brain-gut axis and are subjective in nature. Some evidence suggests that cognitive behavioral therapy (CBT) is effective for reducing abdominal pain, but no studies have evaluated the efficacy of CBT for decreasing functional nausea in youth. The present study evaluated the extent to which an Internet-based CBT intervention for pain decreased nausea in youth with FAP.

Methods: Youth with FAP (ages 11 - 17, n = 270) were randomized to either an 8-week, CBT online program (Web-based Management of Adolescent Pain; WebMAP) or a control condition consisting of an 8-week, online Pain Education (EDU) program (NCT #02327377). Randomization was stratified by previously derived FAP subgroups based on patterns of pain, negative affect, impairment, and coping (High Pain Dysfunctional [HPD], High Pain Adaptive [HPA], Low Pain Adaptive [LPA]). Pre-, mid-, post-treatment, and 6- and 12-month follow-up assessments were administered online. The Nausea Severity Scale assessed nausea frequency, duration, and intensity. Data were analyzed with linear mixed effects models specifying random slopes and intercepts (Treatment Condition X Subgroup X Time). Youth age, sex, and treatment dose were included as covariates. Time was modeled using a piecewise approach, with a linear segment for the treatment period (pre- to post-treatment) and follow-up period (post- through 12-month follow-up).

Results: Nausea severity significantly decreased during the treatment period across both treatment conditions, $t(831) = -2.58, p = .01$. Across FAP subgroups, the main effect for treatment was not significant. A significant Treatment X Time X Subgroup interaction emerged for the treatment period. Specifically, CBT resulted in a greater decline in nausea severity for the HPD subgroup compared to the LPA subgroup, $t(831) = -2.61, p = .009$. Follow-up analyses indicated within the HPD subgroup, there was a significant treatment effect from pre- to post-treatment, $t(332) = -2.34, p = .02$, with CBT producing greater declines in nausea compared to EDU.

Discussion: For youth with FAP who present with significant psychosocial distress and high levels of co-occurring somatic symptoms (i.e., HPD subgroup), CBT interventions designed originally for youth with chronic pain also may reduce co-occurring nausea.

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D166

10:30 AM-11:30 AM

THE ASSOCIATION BETWEEN SEXUAL DATING VIOLENCE AND CYBERBULLYING: FINDINGS FROM THE 2017 YRBSS

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Background: As technology use among U.S. students increases, cyberbullying is a growing concern in adolescent health research. Cyberbullying, known as bullying which takes place on electronic devices or internet platforms, is associated with many adverse health outcomes, such as suicide, poor mental health, and school absence. Youth who experience bullying in intimate partner relationships may also be disproportionately at risk for cyberbullying. The purpose of this study was to examine the relationship between adolescent sexual dating violence and cyberbullying among 9th to 12th grade youth.

Methods: Data were retrieved from the nationally representative 2017 Youth Risk Behavior Surveillance System (YRBSS) survey. The final analytic sample included 13,869 males and females between the ages of 14 and 18. Youth reported sexual dating violence and cyberbullying in a self-administered questionnaire. Multivariate logistic regression was used to calculate odds ratios (ORs) and 95% confidence intervals (CIs) of the relationship between the frequency of sexual dating violence and cyberbullying.

Results: Approximately 4% of youth reported sexual dating violence and 14% reported cyberbullying. In the unadjusted analysis, youth who reported sexual dating violence had statistically significant increased odds of cyberbullying (range of ORs: 4.15 to 6.34). After adjustment, youth who reported sexual dating violence 1 time had twice the odds of cyberbullying (OR=2.07, 95% CI: 1.39-3.07), as compared to those who reported 0 instances of sexual dating violence. Youth who reported sexual dating violence 2-3 times had 2.23 times the odds of cyberbullying (95% CI: 1.22-4.06) while youth who reported sexual dating violence 4 or more times had 1.49 times the odds of cyberbullying (95% CI: 0.69-3.22), as compared to youth who reported 0 instances of sexual dating violence.

Conclusion: These findings suggest a positive association between the frequency of sexual dating violence and cyberbullying and add to the current literature in adolescent health. Researchers should consider additional strategies to address intimate partner violence and cyberbullying in this vulnerable population.

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10:30 AM-11:30 AM

RELATIONSHIPS AMONG PARENTING STRESS, PARENT-CHILD RELATIONSHIP, AND CHILD EATING BEHAVIORS IN YOUNG CHILDREN

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Emerging evidence suggests that the psychosocial stress of parents plays a significant role in childhood obesity. However, the nature of the relationship between parental stress, children's health behaviors, and children's BMI is still not well understood, possibly because there is a limited understanding of the mediating factors. Parenting-related stress may influence the quality of the parent-child relationship, which could be a factor influencing child eating behaviors. The parent-child relationship is a dynamic interaction between a parent and their child. High quality interactions are characterized by the parent's sensitive and appropriate responses to the child, and mutuality and synchrony within the parent-child dyad.

The purpose of the study is to examine the relationships among parenting-related stress, parent-child relationship, and child eating behaviors in young children.

Using a cross-sectional study design, mothers completed well-validated questionnaires to assess parenting-related stress, parent-child relationship, and child eating behaviors, and child BMI. Due to multicollinearity, subset of parent-child relationship (parental support[P_SUP] and satisfaction of parenting(P_SAT) and child eating behaviors (Emotional overeating [EOE], satiety responsiveness [SR]) were chosen for data analysis. Structural equation modeling was used to examine the path model.

The sample included mothers of 172 children (children sample: mean age 4.92 (SD 0.89) years; 50% girls; 71.2% white; 44% overweight or obese). Parenting-related stress was negatively associated with P_SUP ($\beta = -0.04$, $p < .01$), and P_SAT ($\beta = -0.08$, $p < 0.01$). PC_SUP and PC_SAT were negatively associated with EOE ($\beta = -0.05$, $p = 0.03$; $\beta = -0.05$, $p < 0.01$, respectively). However, neither PC_SUP nor PC_SAT was associated with SR ($\beta = -0.03$, $p = 0.07$; $\beta = -0.002$, $p = 0.90$, respectively). Furthermore, only EOE was associated with child BMI ($\beta = 0.11$, $p = 0.01$). The mediating effect of parent-child relationship (PC_SUP & PC_SAT) for the relationship between parenting-related stress and EOM was supported ($\beta = 0.01$, $p < 0.01$).

Parenting-related stress and parent-child relationship significantly influence children's emotional overeating. Furthermore, parent-child relationship is an important target point for improving children's emotional over eating behaviors among families of parents with high parenting-related stress.

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NOT BREATHING EASY: CAREGIVER EXPERIENCES OF ASTHMA MANAGEMENT IN SOCIO-ECONOMICALLY DISADVANTAGED CIRCUMSTANCES

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Background: Asthma disproportionately affects socio-economically disadvantaged and African-American children, who see higher rates of asthma prevalence, emergency department visits, hospitalizations, and mortality. Despite growing recognition of the social determinants of these disparities, the clinical literature generally frames childhood asthma exacerbation as the outcome of caregiver non-adherence to doctor-prescribed pharmaceutical regimes. Such framing attributes blame to caregivers and oversimplifies the complex realities of asthma management in adverse circumstances. Obtaining caregiver perspectives on asthma management may expand conceptions of asthma management and indicate alternative venues for intervention.

Objective: To understand the lived experiences and management practices of asthma caregivers in socio-economically disadvantaged circumstances.

Method: We interviewed 42 caregivers of a child aged 0-18 with an asthma diagnosis. Caregivers were recruited from two locations (Gainesville, Florida, and St. Louis, Missouri) and stratified by economic status. 28 caregivers identified as African-American and 32 caregivers met our criteria for low SES based on a measure of ability to pay an unexpected hospital bill. Data were analyzed by 2 independent coders using standard thematic analysis and validation techniques.

Results: Our interviews located asthma management within complex lives where caregivers were challenged by financial insecurity, environments they could not change, and competing health conditions or disruptive life events. Caregivers described proactively engaging in a range of intensive asthma care work, including diagnostics, vigilance and monitoring, emotion management, and environmental and behavioral control. For example, caregivers described: setting alarms to check children's breathing throughout the night; intensive cleaning; monitoring and diagnosing children's symptoms, and attempting to regulate air quality, control others' smoking habits, and manage children's physical activity and emotions. Caregivers' routine use of "rescue" bronchodilators to prevent symptoms may indicate the need for more clinical support, rather than 'non-adherence'. Caregivers sometimes recognized that they were perceived as non-adherent by their own providers, and this framing could diminish trust between caregiver and provider.

Conclusion: Asthma caregivers in socio-economically disadvantaged circumstances manage substantive and under-recognized burdens of care work. A deeper understanding of caregivers' experiences may inform intervention development to support this care work and improve asthma outcomes.

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DO PARENTS' PERCEPTIONS AND PROMOTION OF ACTIVE PLAY DIFFER BY INFANTS WEIGHT STATUS?

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Background: Worldwide, more than 40 million children under the age of 5 are overweight or obese. To combat childhood obesity, there is growing evidence supporting the need to begin encouraging opportunities for active play (AP) during infancy (0-12 months). These opportunities for AP may be impacted by parents and the home environment. However, little research has explored if an infant's weight status is related to parents' perceptions of their promotion of AP and factors of the home environment.

Purpose: The purpose of this study was to explore and compare parents' perceptions and promotion of AP with normal weight (NW) and overweight (OW) infants.

Methods: Parents of OW (>95th weight-for-length percentile; n=11) and NW (n=18) infants were recruited for this study. Parents completed a semi-structured interview guided by the Theory of Planned Behavior to explore parents perceptions of AP and the Affordances in Home Environment Motor Development-Infant Scale (AHMED-IS) to assess the home living environment.

Results: When discussing AP, parents of OW infants most often viewed AP as an interaction between the parent and child (63.7%) while a higher proportion of parents of NW infants viewed AP as general movement (44.4%). Although most parents (62.1%) viewed AP's influence as largely for cognitive benefit, parents of NW infants were more likely to report physical development benefits (50% vs 27.3%). Further, OW infant parents more frequently reported using cognitive play strategies (e.g., sing songs) while engaging in AP (63.6% vs. 38.9%) rather than physical strategies (e.g., practice standing). While most parents were unable to specifically state any recommendations for AP, more NW parents reported feeling the American Academy of Pediatric recommendations were achievable (88.9% vs. 63.6%). Findings from the AHMED-IS revealed OW infants were more frequently carried in adults arms, attached to caregiver's body, or in a carrying device (p=0.038). NW infants showed to have more access to materials that stimulated locomotor movements such as walk mats and climbing equipment (p=0.003).

Conclusion: The findings from this study suggest that parents perceptions of and promotion of AP may differ based on the weight status of the infant such that NW infants may have more opportunities to stimulate locomotor movement through promotion of AP by parents and the materials they provide in the home; however, more research using objective assessments are needed.

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MINDFULNESS-BASED SOCIAL-EMOTIONAL LEARNING CURRICULUM ON PRESCHOOL STUDENTS: A RANDOMIZED-CONTROLLED TRIAL

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Background: Development of social and emotional competence in the preschool years contributes to academic success and healthy functioning in later years. Education in the East focuses on academic success while undermining the holistic development of children. Mindfulness-based training showed beneficial results in fostering attention, emotional regulation and in improving interpersonal skills of preschool children. This pilot study explores the potential benefits of a Mindfulness-based Social-Emotional Learning Curriculum on preschool children's social and emotional functioning.

Methods: This study adopted a randomized-controlled study design. Children attending second year of preschool in Hong Kong were randomly assigned into the intervention group (N = 75) and no-treatment control group (N = 80). 12 weekly sessions of Mindfulness-based Social-Emotional Learning Curriculum that aims to promote their self-regulatory and prosocial skills, as well as cultivate their qualities of kindness were delivered to students in the intervention group. Repeated-measure ANOVAs, controlling for baseline scores as well as child's gender, were conducted to assess for the potential effectiveness of the curriculum; while exploratory ANOVAs were also conducted to test for individual differences (grouped by percentile) in baseline social competence in response to curriculum.

Results: Significant group by time interaction with small to medium effects were found in the domains of children's social competence and prosocial behaviors as rated by their teachers. Post-hoc analyses revealed that children attended the curriculum showed significant improvements in prosocial/communication skills ($M_{Pre} = 2.77$; $M_{Post} = 2.98$), emotional regulation skills ($M_{Pre} = 2.56$; $M_{Post} = 2.76$), academic skills ($M_{Pre} = 2.62$; $M_{Post} = 2.86$), and prosocial behaviors ($M_{Pre} = 6.59$; $M_{Post} = 7.28$). Children with middle or high levels of baseline emotional regulation and academic skills in the intervention group showed more improvements in social competence compared to the control group.

Conclusion: The Mindfulness-based Social-Emotional Learning Curriculum was found viable in enhancing the social and emotional functioning of preschool children. Further research with multiple time-point measures and larger sample size are needed to investigate whether those with lower baseline functioning can experience similar improvements and explore the long-term implications of the curriculum.

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10:30 AM-11:30 AM

THEORY-BASED, RANDOMIZED CONTROLLED TRIALS TO IMPROVE HUMAN PAPILLOMA VIRUS VACCINE UPTAKE IN THE UNITED STATES

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Background: Human Papilloma Virus (HPV) vaccination presents a significant opportunity to decrease the incidence of genital warts, and HPV-attributable cancers, such as cervical and penile cancer. Despite the availability of the HPV vaccine in the US since 2006, uptake remains suboptimal. Recently, some interventions targeting parents have shown the potential to improve increase HPV vaccine uptake. These interventions may be more effective if they are grounded in an appropriate theory.

Purpose: This study aims to systematically review theory-based randomized controlled trials (RCTs) targeting parents to increase of HPV vaccine uptake and to assess the extent of theory application in development and evaluation of these interventions.

Methods: Intervention studies published from January 2006 to May 2019 were identified through a structured search in PubMed, EMBASE, SCOPUS, CINAHL, Medline, and PsycInfo. Studies were included if they explicitly utilized a behavioral theoretical model or framework, examined actual vaccine uptake rate based on objective data from patients' medical records, applied a randomized controlled research design, published as a full article in English, and sampled the US population. Selected studies were assessed for risk of bias using the Cochrane risk-of-bias tool for RCTs and theory-use using the Theory Coding Scheme developed by Michie and Prestwich in 2010.

Results: 4 studies were included for extraction and analysis. A tailored interactive educational video-based intervention had a significant result. The effect of reminders and educational brochures were mixed, which makes it challenging to draw a definitive conclusion. Brief Negotiated Interviewing did not have any significant effect. Interventions that utilize the Theory of Planned Behavior and Health Belief Model showed positive results. Although all the trials explicitly reported that the interventions used were based on a theory, none of them reported carrying out a mediational analysis of the theory constructs or discussed the results in relation to theory. None of the studies were assessed to be free of bias.

Conclusions: Although a very limited number of robust-designed theory-based interventions target parents for improving HPV vaccination uptake, using reminders and tailored interactive videos potentially can be beneficial. More well-designed RCT interventions based on thoroughly applied health behavioral models/theories are needed to target parents for increasing the rate of HPV vaccination.

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10:30 AM-11:30 AM

SUGAR CONSUMPTION AND HEALTHY FOOD PARENTING: A DYAD STUDY

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Childhood obesity has grown to epidemic levels and is a concern that is spreading across the world (Karnik & Kanekar, 2012). The CDC reports that 18.4% of adolescents between the ages of 2-19 are currently obese in the United States (CDC, 2019). Prior research shows that these numbers will only continue to climb, a major contributor to the rise of poor health in children that ultimately carries over into adulthood (Reilly, 2005). There are many factors contributing to this epidemic, with one of the largest players being parental feeding practices (Wardle & Carnell, 2007). In the current study, parental feeding practices and food consumption were examined along with child food consumption. It was hypothesized that food parenting behaviors would relate to child consumption of unhealthy foods.

Participants in this study were 72 seventh graders and their parents (Mage = 12.66, SD = 0.7). Participants were 68% white and 57% male with a mean BMI of 20.04. A food frequency questionnaire (FFQ) and the Comprehensive Feeding Practices Questionnaire (CFPQ; Musher-Eizenman & Holub, 2007) were completed by parents. Pearson correlations showed a relationship between parental consumption of both added sugar foods and beverages, and child consumption of added sugar foods and beverages ($r = .28, p = 0.042$; $r = .39, p = 0.004$). Additionally, parental consumption of added sugar food and beverage was positively correlated with parental perception of their child's intake of sugary food and sugary drinks ($r = 0.52, p = 0.000$; $r = 0.69, p = 0.000$). Along with parents' awareness that their child is mimicking their sugar intake, the CFPQ variable, modeling, was negatively correlated with parental added sugar food intake ($r = -0.35, p = 0.008$). Modeling of appropriate eating behavior is a key to teaching children to be healthy food consumers. The CFPQ variable for teaching about nutrition is also negatively correlated with both parental added sugar food intake and parental perception of their child's sugary food intake ($r = -0.29, p = 0.032$; $r = -0.47, p = 0.000$).

Taken together, this data demonstrates that parents who model healthy eating behavior and teach their children about nutrition both eat less sugar themselves and feed their children less sugar. Further research should be performed on parental education on sugar intake. Parents are the gatekeepers of food and appropriate nutrition and more programming should be targeted toward the full family unit.

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10:30 AM–11:30 AM

RESILIENCE AMONG BLACK ADOLESCENTS WITH LARGE BODIES: THE ROLE OF SLEEP, QUALITY OF LIFE, AND CAREGIVER FACTORS

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Introduction: Black adolescents have a 34% higher likelihood of having higher body mass index (BMI) relative to White peers, illustrating a major health disparity. Previous literature primarily focuses on risk factors related to higher BMI with limited research on resilience. Existing research shows a relationship between resilience and general quality of life, however, less is clear about the potential contribution of sleep, weight-related quality of life, and caregiver risk and protective factors to adolescent resilience. We examined associations between adolescent resilience and youth sleep problems, youth weight-related quality of life, caregiver resilience, and caregiver psychopathology in a sample of Black adolescents with large bodies (i.e., BMI >95th percentile).

Methods: Black adolescents (n=32, age 11–17 years; 69% female; MBMIz=2.59, SD=0.42) and their primary caregiver were recruited from a pediatric healthy lifestyle clinic in the U.S. south. Trained research assistants interviewed youth on the Adolescent Sleep-Wake Scale-short version (ASWS-S), Impact of Weight on Quality of Life Scale (IWQOL), and Child and Youth Resilience Measure (CYRM). Caregivers provided demographic information and completed the Conner-Davidson Resilience Scale (CDRISC) and Brief Symptom Inventory (BSI). Correlations were examined and a hierarchical linear regression model was run, examining associations between youth resilience and youth sleep problems and quality of life (step 1), and caregiver resilience and caregiver psychopathology (step 2).

Results: Adolescent report of hours slept on school nights (M=7.92, range 5.5–11.0) was significantly positively correlated with youth resilience ($r = .60$). The overall regression model was also significant [$F(4, 27) = 6.15, p < .01, \text{Adj. } R^2 = 40\%$] with fewer sleep problems ($\beta = -.41, p < .05$) and higher caregiver resilience ($\beta = .46, p < .01$) being associated with greater youth resilience. Conclusions. Findings that fewer sleep problems and greater caregiver resilience are associated with higher youth resilience among adolescents with large bodies highlight novel directions for future research and interventions aimed at promoting resilience. Further, relations between hours slept and resilience in adolescents allude to the need for assessing sleep in medical and mental health settings, as well as policy recommendations on delaying school start times and other structural changes to enhance quantity and quality of sleep for adolescents.

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10:30 AM–11:30 AM

YOGA FOR CHRONIC LOW BACK AND NECK PAIN IN MILITARY PERSONNEL: A PILOT RCT

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Chronic low back pain (cLBP) and chronic neck pain (cNP) are prevalent conditions that are leading causes of disability among active-duty military personnel. Yoga is an evidence-based non-pharmacological intervention with documented benefits in community samples. However, yoga has not been well-studied among military personnel. We conducted a pilot RCT examining the feasibility/acceptability of two types of yoga for military personnel with CLBP/cNP.

Military personnel with cLBP and/or cNP were recruited at a large military medical facility. Participants were randomized to either active yoga or restorative yoga. Participants were assessed at baseline, 12 weeks, and 6 months; were asked to attend 1–2 classes weekly for 12 weeks; and to conduct daily yoga home practice. The primary feasibility outcomes were recruitment rates, intervention attendance, retention for assessments including health outcomes, and satisfaction/acceptability.

In 7 months, 49 participants were enrolled. Approval to locate a research staff member at the military pain clinic was key to recruitment. Of the 49 randomized, 39 (80%) attended 1 or more yoga classes. An additional 7 people participants informed study staff they could not attend further yoga sessions because of deployment, injury, or other health problems. Among those who attended and did not drop out (65%), the average number of weeks attended at least 1x was 8.9 (74%). Of all participants randomized, 57% attended yoga in for 50% or more of the weeks offered. 42 (86%) participants were assessed at 12 weeks and 39 (80%) were assessed at 6 months. Satisfaction ratings were high, with 80–90% strongly agreeing on “enjoyed participation”, “liked instructors”, “continuing yoga”. Health outcomes improved over time.

In conclusion, data suggest that researchers can feasibly conduct a larger RCT comparing styles of yoga for cLBP/cNP with active-duty military personnel to confirm health benefits and understand what type of yoga is preferred.

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STILL VISITING THE DOCTOR: THE IMPACT OF CIM AND LIFE OUTLOOK ON NUMBER OF HEALTHCARE VISITS IN A NATIONAL MIGRAINE POPULATION

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Introduction: Over the last decade, the use of complementary and integrative medicine (CIM) for pain management has increased dramatically. As CIM interventions often cost less than conventional medicine (e.g., physician visits and medications), it is worth examining whether those using CIM for pain management report fewer physician visits. As a common goal with CIM modalities (e.g., psychotherapy and meditation) is to increase satisfaction with life and symptom self-management, it is possible that those who have used CIM may have an increased self-efficacy to live life despite their pain (i.e., have a more positive life outlook) and thus feel less of a need for more frequent healthcare visits. In the present study we hypothesized number of healthcare visits (NHV) to be significantly different between those using and not using CIM for migraine management, as well as those with positive vs negative life outlooks.

Method: Data was collected from 4506 respondents to the 2015 MigraineinAmerica.com survey ($M_{age} = 45.72$ years, 95.4 % female, and 91.1 % Caucasian). CIM use was categorized into three groups: Never Used, Previously Used, and Currently Use. Life outlook was categorized into Positive and Negative Life Outlooks. Group differences were assessed with a two-factor ANOVA, using SPSS version 26.

Results: A 2x3 ANOVA showed significant main effects for CIM Use ($F_{(2,4116)} = 59.27, p < .001, h_p^2 = .03$), and Life Outlook ($F_{(1,4116)} = 11.96, p < .001, h_p^2 = .003$). No significant interaction was found between CIM Use and Life Outlook ($F_{(2,4116)} = .794, p = .471, h_p^2 = .000$). Bonferroni adjusted pairwise comparisons showed those who currently use CIM to have reported a greater NHV than those who previously used CIM ($p < .001$) and those who never used CIM ($p < .001$). Those categorized as having a positive life outlook additionally reported fewer NHV than those with a negative life outlook ($p < .001$), although it is worth noting the omnibus effect size for life outlook was extremely small.

Discussion: The findings from the current study shed important light on healthcare behaviors of those managing migraine symptoms with and without the use of CIM. A potential explanation for our findings is that those using CIM for migraine symptom management may often have severe symptomology, resulting in the use of multiple modalities (e.g., both CIM and conventional medicine), whereas those with less severe symptoms may feel a singular modality to be sufficiently efficacious.

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RELAXATION EFFECTS OF A COMPLEMENTARY HEALTH APPROACH (UZIT) FOR SYMPTOM MANAGEMENT IN PERSONS WITH PULMONARY HYPERTENSION

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Mindfulness-based intervention use in chronic conditions often focuses on stress reduction and symptom alleviation, aiming to achieve relaxation response. Pulmonary hypertension (PH) is a debilitating and progressive cardiopulmonary condition with high symptom burden of pain, anxiety, fatigue, and dyspnea. Despite advances in the medical management of PH, few clinicians encourage complementary health approach (CHA) use. A mixed-method pilot clinical trial documented the preliminary efficacy of a multicomponent Urban Zen Integrative Therapy (UZIT) showing symptom burden reduction and health-related quality of life improvement.

Qualitative descriptive data analysis of participants' responses to UZIT revealed that Relaxation and In-Between State (vacillates between aware and unaware) were common themes describing the experience of UZIT and important as primary endpoints of mind-body research. Original themes included: practicality, relaxation during and outside UZIT, In-Between state, benefits, uniqueness, and balance. The purpose of the study was to identify elements/phenomenon contributing to and defining the characteristics of patients' experience of relaxation, which can guide future research in tailoring this CHA for patients with severe limitation in energy reserve.

Thirteen adults with PH from the Ohio State University Wexner Medical Center PH clinics received 78 individualized UZIT sessions by trained therapists. One-hour UZIT session included: aromatherapy, gentle-body movement, restorative pose, body-awareness meditation, and Reiki. Thirty-two focused-interview transcripts from UZIT session video recordings were analyzed for thematic content using basic qualitative content analysis and constant comparison techniques.

Eight sub-themes were identified as descriptive of the experience of Relaxation and an In-Between state during UZIT (Table 1). Participants described: 1) all 5 UZIT components in relation to relaxation, 2) temporal effects related to UZIT such as short time required to achieve relaxation.

UZIT facilitated participants' Relaxation and In-Between State experiences. Thorough understanding of contributing factors and defining characteristics of Relaxation and the In-Between State can lead to UZIT best use practices or modification. These findings also elucidate key constructs relevant for future quantitative measurement of relaxation. Successful integration of CHA has the potential to empower patients in self-management without added side effects.

Table 1. Contributing Factors and Defining Characteristics

	Relaxation	In-Between State	Both
Contributing Factors	Mindful Breathing		Meditation
	Essential Oil		Reiki
	Positioning		UZIT effects last?
	Carry-Over Effects		Promptness
Characteristics		Lost in Time	Weightlessness
		Body Disconnected	Sedative
		Out-of-Body	Muscular Release
		Aware/Unaware	
		Flashes of Light	
		Sleep	

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SLEEP AND PSYCHOSOCIAL OUTCOMES IN PRE-HYPERTENSIVES USING A BREATHING AWARENESS MEDITATION SMARTPHONE APPLICATION

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Background: Breathing awareness meditation (BAM) has been shown to reduce blood pressure and stress. Although most studies were conducted using group-based sessions, the ubiquity of smartphones provides opportunity to improve reach to those unable to meet face-to-face. Tension Tamer (TT) is a smartphone BAM app that uses timed sessions and heart rate captured by the smartphone's camera using validated reflective photoplethysmography for each BAM session to provide time/date stamped adherence records and foster app engagement. Objective of this study is to report on secondary outcomes of sleep and psychosocial functioning of a 12-month randomized controlled trial using prehypertensive adults defined by the Joint National Committee (JNC7) guidelines.

Methods: 80 adults (mean age: 42.8 yrs; 39 males; 43 White; 37 Black) with verified JNC7 defined pre-HTN on 3 consecutive sessions (mean SBP: 128.3 mmHg; 95% recruitment rate) were randomly assigned to TT or healthy lifestyle attention control group that included the Runkeeper™ app for recording the same volume of prescribed walking or running. Each group received the same twice daily dosage schedule (mth 1:15 min dose, mths 2-3 10 min dose; mths 4-12: 5min dose). Measures were taken at baseline, month 1, 3, 6, and 12.

Results: No significant change scores differences between baseline and follow-up months were observed between the TT vs the healthy lifestyle attention control group for the Pittsburgh Sleep Quality Index's summary or subscale measures, depressive symptoms (Beck Depression Inventory; all p 's > .21), worry (Penn State Worry Questionnaire - Abbreviated; all p 's > .43), anxiety (Spielberger State Anxiety Inventory; all p 's > .51), rumination (Scott-Macintosh Rumination Inventory; all p 's > .23), or stress (Perceived Stress Scale; all p 's > .13).

Conclusion: Findings suggest that although TT has been shown to improve blood pressure in pre-hypertensives, the BAM app may not provide benefits to sleep and psychosocial outcomes. Additional targeted cognitive behavioral interventional components will be needed to fully address these issues in populations of need.

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PROVIDER-PATIENT COMMUNICATION ABOUT COMPLEMENTARY AND INTEGRATIVE HEALTH: A SYSTEMATIC SCOPING REVIEW

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Background: Complementary and integrative health (CIH) practices are widely used across many populations internationally. How patients communicate with their health care providers about these non-biomedical treatments has important implications for the quality of healthcare.

Objective: We undertook a systematic scoping review to map out the evidence about the role of healthcare provider-patient communication about complementary and integrative health practices and treatments.

Methods: We identified eligible peer-reviewed studies published in English between January 2010 and April 2018 by searching keywords and synonyms about complementary and alternative medicine combined with healthcare providers-patient communication and decision-making, in the following databases: PubMed, PsycINFO, Embase, CINAHL, Cochrane Database of Systematic Reviews, Scopus and Communication Source. Studies were included if they were published in a journal and reported empirical evidence about CIH disclosure. CIH was defined as whole systems (e.g. Chinese medicine), ingestible CIH (e.g. herbs), or mind-body practices. We registered our search protocol on the Prospero database and followed the PRISMA guidelines. All screening and eligibility assessments were done independently by two reviewers. We resolved disagreements through discussion.

Results: We screened 7,882 studies and assessed 593 full-text studies for eligibility. 273 studies were included in the final review. Thematic analysis of the studies resulted in three non-mutually exclusive study subsets: 125 studies about the prevalence of patients' disclosure rates to their biomedical providers about CIH; 146 studies about the quality of the communication between patients and biomedical providers about CIH; and 72 studies about the quality of the communication between patients and their CIH providers about their CIH treatments. Analysis of the first sub-set has shown that about a third of the studies were conducted in North America and about one third in Asia. Studies reported ranges of disclosure rates ranged depending on type of CIH treatment/practice. The disease types of the studies were mixed, but the most frequent was cancer/cancer survivorship.

Discussion: There is an abundance of research on the topic of provider-patient communication about CIH practices and treatments. This scoping review is the first step in a multi-faceted systematic review project to map out and synthesize this literature. Initial findings indicate that disclosure is influenced by CIH treatment/practice, which could inform future intervention work.

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THE ROLE OF ANTICIPATED AND ANTICIPATORY AFFECT IN REACTIONS TO GENOMIC SEQUENCING FEEDBACK

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Background: Research shows that future-oriented emotions, including anticipatory affect (e.g., present worry about a potential future outcome) and anticipated negative affect (e.g., expecting that one will react negatively in the future), differentially predict decision making (Baumgartner et al., 2008). Additionally, research on affective forecasting shows that people are generally poor at predicting their reactions to a negative emotional event (Peters et al., 2014). One example of a health decision-making context that has been shown to be influenced by future-oriented emotions is decisions to receive genomic sequencing feedback (Ferrer et al., 2015). Yet, little is known about the degree to which anticipated and anticipatory emotions are related to the consequences of a decision to receive genomic sequencing feedback—that is, an individual's social, emotional, and behavioral responses to such feedback.

Methods: This research was conducted in the context of an actual clinical genomic sequencing trial, the ClinSeq® study. 461 participants (M age=63.9, SD=5.61, 46% female) who were enrolled in the first cohort of the trial and received genomic sequencing feedback were included in the current study. Participants responded to measures assessing anticipated and anticipatory affect about sequencing results at baseline. Psychological and behavioral responses to sequencing results, including participants' reported anxiety, decisional conflict, and distress about sequencing results, whether they shared results with family members, and their intentions to continue learning results in the future, were collected immediately, 1 month, and/or 6 months after receiving results.

Results: Higher levels of anticipated (AD) and anticipatory (AY) affect at baseline were significantly associated with increased anxiety (AD $p=.02$, AY $p<.001$), decisional conflict (AD $p<.001$, AY $p=.02$), distress (AD $p=.032$, AY $p=.09$), and uncertainty (AD $p=.005$, AY $p=.013$) after receiving results, as well as lower intentions to continue learning results in the future (AD $p<.001$, AY $p<.03$). When comparing the partial effect sizes of anticipated versus anticipatory affect on these outcomes, anticipated affect consistently emerged as the stronger predictor.

Conclusions: These results contribute to a growing body of evidence surrounding the role of future-oriented emotions in genetic testing, behavioral medicine, and health decision-making more broadly. Future work should continue to examine the impact of anticipated and anticipatory emotions in behavioral medicine, including defining how the effects of specific future-oriented emotions (e.g., anticipated regret vs. anticipated upset) differ, and identifying whether interventions targeting change in future-oriented emotions may have clinically meaningful effects in the context of genetic counseling.

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VALUES CLARIFICATION CHANGED ATTITUDES TOWARD SHARING INFORMATION FOR PRECISION MEDICINE RESEARCH, BUT NOT RISK PERCEPTIONS

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Background: The *All of Us* Research Program (AoURP) is an NIH-funded study that aims to enroll 1 million people living in the United States to better understand health. Given the breadth and sensitivity of data being collected, it is paramount that people who participate in AoURP do so with a full understanding of the privacy risks. We conducted an online randomized experiment to evaluate the effect of a values clarification exercise about sharing information with AoURP on people's risk perceptions and attitudes towards sharing their personal information with researchers.

Methods: Eligible participants were English-speaking U.S. adults who were *not* enrolled in AoURP. We set recruitment targets by education so that 40% of participants had a high school diploma or lower educational attainment. We randomized participants ($N = 1,181$) to two study arms. Participants in the education-only condition ($n = 584$) completed an online decision aid describing the types of information gathered from participants in AoURP and how they are used. Participants in the education with values clarification condition ($n = 597$) completed the same decision aid with an additional exercise in which they indicated which reasons for and against sharing information with AoURP were important or not important to them. We conducted ANCOVAs and logistic regressions with health literacy, the interaction of experimental condition by health literacy, educational attainment, race/ethnicity, gender, and age as covariates.

Results: We observed no differences by experimental condition in the proportion of participants who correctly identified privacy as the main risk of joining AoURP ($p = .263$). There were also no differences by experimental condition in deliberative risk perceptions ($p = .473$), affective risk perceptions ($p = .178$), or experiential risk perceptions ($p = .251$). Participants who completed the values clarity exercise had less positive attitudes toward sharing their personal information with *All of Us* researchers ($M = 4.73$, $SE = 0.06$, Range = 1–7) than did those in the education-only condition ($M = 4.90$, $SE = 0.06$), $F(1, 1159) = 3.91$, $p = .048$.

Conclusions: Research shows that privacy policies are difficult for the average person to understand. The current study showed that a values clarification exercise weakened attitudes toward sharing personal information as part of a precision medicine research study without improving participants' understanding of the associated risks.

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HOPEFUL YET HESITANT: HOW AN OPTIMISTIC BIAS FOR SURVIVAL SHAPES AN END-OF-LIFE MEDICAL DECISION

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SELF-DETERMINATION THEORY CONSTRUCT ASSOCIATIONS WITH DIETARY BEHAVIOR IN EMERGING ADULTS AT RISK FOR DIABETES

Cassandra M. Gonzalez, M.A.¹, Stephanie McDonough, Ph.D.², Valery Bodziony, M.S.³, Barbara Stetson, Ph.D.⁴¹University of Louisville, Louisville, KY; ²Department of Clinical and Health Psychology University of Florida Health, Gainesville, FL; ³University of Louisville, Louisville, KY; ⁴University of Louisville Psychological and Brain Sciences, Louisville, KY**Background:** Prevalence rates of Type 2 diabetes (T2D) within young adults are on the rise. Obesity, inactivity, and family hx are leading risk factors for developing T2D. Awareness and understanding of T2D risk factors may contribute to leading a healthy lifestyle. Self-determination theory (SDT) posits the importance of motivation [autonomous/intrinsic vs. controlled/extrinsic] and perceived competence (PC), such that individuals need to feel autonomously motivated and competent to sustain behaviors. As diet is modifiable and may decrease risk, SDT can inform interventions aimed at improving dietary behavior in emerging adults.**Aim:** This study examined associations between SDT-informed healthy diet motivation (autonomous: AMot, controlled: CMot), diet PC, and dietary behavior in emerging adults at-risk for T2D.**Method:** Ss were 66 sedentary emerging adults with a family hx of T2D ($M_{age} = 20.30$; 80.3% female; 59.1% overweight/obese). Dietary behavior was assessed using the Summary of Diabetes Self-Care Activities (SDSCA-Diet) and Starting the Conversation-Diet (STC-D) measures. AMot and CMot was assessed with the Treatment Self-Regulation Questionnaire (TSRQ). PC for maintaining a healthy diet was assessed with the Perceived Competence Scale-Diet (PCS).**Results:** Ss reported high levels of fast food intake ($M = 2.17, SD = 0.95$; 51.5% reported >3 times/week) and low daily fruit/vegetable intake ($M = 1.27, SD = 0.87$; 79.7% reported < 3 servings/day). Diet PC ($M = 3.88, SD = 1.32$) was not associated with AMot ($M = 5.69, SD = 0.96$), $p = .95$, or CMot ($M = 3.55, SD = 1.25$), $p = .09$. Higher PC was associated with less fast food consumption ($r = -.308, p < .05$) and higher fruit/vegetable intake ($r = .272, p < .05$). Moreover, higher PC was associated with better dietary behaviors (SDSCA general diet $r = .447, p < .001$). Neither AMot or CMot were significantly associated with diet behaviors. Post-hoc analyses revealed a negative association between T2D risk knowledge and diet PC ($r = -.293, p < .05$).**Conclusion:** Findings suggest suboptimal diet in this emerging adult, at-risk sample. SDT suggests PC is a fundamental need required to promote sustained, intrinsic motivation. The negative associations observed between T2D knowledge and PC for a healthy diet may indicate a lack of awareness of unhealthy dietary behaviors and their influence on their personal T2D risk. T2D prevention efforts may benefit from focusing on at-risk emerging adults and their dietary knowledge and perceived risk for developing T2D.

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RELATIONSHIP BETWEEN MENTAL HEALTH AND ADHERENCE AMONG INDIVIDUALS WITH TYPE 2 DIABETES IN OXCUTZCAB, YUCATAN, MEXICO

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The relationship between mental health and type 2 diabetes (T2DM) is bidirectional. The risk of depression among individuals with T2DM is approximately 50%, which can decrease adherence to treatment recommendations. Physiologically, treatment adherence refers to blood glucose monitoring and control through lifestyle changes and medication. From a psychosocial point of view, adherence is assessed by self-efficacy and social support. Mental health status provides important information about treatment adherence and may be overlooked in disease management programs. T2DM research in the Yucatan primarily examines therapeutic adherence and does not consider the role of mental health. In Mexico, T2DM is costly and disease rates are expected to increase. Therefore, it is imperative to understand the physiologic and psychosocial factors that contribute to adherence. The purpose of this study was to examine the relationship between depression, anger, anxiety, and therapeutic adherence among individuals with T2DM. The present study used a cross sectional research design. Individuals with T2DM were recruited from the “Prospera Human Development Program” in Oxcutzcab. 111 participants completed the State-Trait Anxiety Inventory, State-Trait Anger Expression Inventory, Beck Depression Inventory, Scale of Adherence to Diabetes Mellitus Type 2 Treatment, and Morisky Green Levine Medication Adherence Scale. Chi-square test of independence analyses found statistically significant relationships between state anger and hygiene and self-care ($\chi^2 [2,111] = 17.68, p = 0.00$), state anxiety and diet ($\chi^2 [2,111] = 8.63, p = 0.01$), and depression and family support ($\chi^2 [4,111] = 10.76, p = 0.03$). Post hoc comparisons revealed significant differences in hygiene and self-care for individuals with low and high state anger but not medium state anger. Significant differences in diet was found for individuals with low and medium state anxiety but not high state anxiety. Family support did not differ for levels of depression. To address the relationship between adherence behaviors and mental health, healthcare providers should incorporate mental health assessment and education into disease management. Appointments and programs can begin with mental health screening and address mental health and T2DM literacy through education and support. Future research should integrate mental health programming into current disease management programs and examine the impact on adherence behaviors.

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REMOTE PEER LEARNING FOR US-CAMBODIA LAY HEALTH WORKERS MANAGING DIABETES (PLUS CAMBODIA)

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Aims: This study used a single-group, pre-post design to pilot a peer-learning intervention between community health workers (CHWs) in the US and Village Health Support Guides (Guides) in Cambodia to improve outcomes for Cambodians with type 2 diabetes (T2D).

Methods: American investigators trained CHWs, face-to-face, in principles of Peer-to-Peer Learning. Next, using tablets, CHWs trained Cambodian Guides, remotely, in a culturally derived cardiometabolic patient education curriculum called Eat, Walk, Sleep (EWS). Guides practiced delivering EWS sessions with Cambodian investigators until ready to work directly with patients. Finally, Guides met with patients, face-to-face, monthly for 6 months to deliver EWS, while still receiving ongoing support from CHWs. Measures: CHWs and Guides responded to surveys with scales 1-4 with higher scores more desirable; 25-item diabetes knowledge quiz, 10-item job satisfaction (“on most days are you enthusiastic about being a CHW/Guide?”), 10-item self-evaluation (“are you confident?”), 12-item attitudes regarding tablets (“will learning the tablet be easy?” [baseline] vs “was learning the tablet easy?” [post]). For patients, at baseline and post, study staff obtained blood pressure, anthropometrics, and blood samples for A1c. Paired t-tests with $\alpha < .05$ were used to compare values at baseline and post (6-months).

Results: The 2 CHWs were women, age M=61.5 years, both divorced with 8-12 years education, 1/2 with T2D. Both had been CHWs for >10 years. Both had used and owned a smart phone. 1/2 used and owned a tablet, desktop and laptop computer, the other had used them but did not own them. Scores on all surveys improved for the CHWs, though no statistical tests were run due to the n=2 sample size: knowledge 78.0% [0.0] vs 98.0 [0.0] Cohen's d=7.1), job satisfaction (32.0 [5.7] vs 39.0 [1.4] d=1.6), self-evaluation (32.0 [2.8] vs 37.0 [0.0] d=1.8), tablet attitudes (33.5 [3.5] vs 48 [0.0] d=4.1). The 5 Guides had age M=41 years, 4/5 women, 4/5 married, years as a Guide M=14.2, 4/5 had < 8 years education, 2/5 relied on bicycle for transportation. All owned and used a cell phone, 3/5 owned a smart phone, none had used or owned a computer or tablet. Except for job satisfaction, scores significantly improved for Guides: knowledge (53.6% [15.6] vs 95.2 [3.3]); self-evaluation (27.8 [1.5] vs 29.8 [0.4]), tablet attitudes (32.6 [2.3] vs 36.0 [4.4]). For patients, n=60 consented and 2 withdrew leaving n=58. They were age M=53.9, all treated with oral agents, 64% women, 78% married, modal education < 6 years. Patients showed significantly decreased systolic (122.7 [14.6] vs 119.5 [15.6]) and diastolic (80.3 [8.3] vs 77.8 [7.8]) blood pressures mmhg, A1c% (9.21 [2.1] vs 7.6 [1.7]), and a non-significant decrease in body mass index (25.9 [3.8] vs 25.7 [4.0]).

Conclusions: Cross-country peer-learning is promising and could eventually help other diaspora communities.

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THE INTERACTION OF DIABETES AND BIOPSYCHOSOCIAL FACTORS IN SHAPING AGE TRAJECTORY OF DISABILITY DEVELOPMENT

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Background: This study aims to identify: 1) effect of normal aging versus diabetes mellitus on the development of disability from midlife to older age; 2) the extent to which and the duration of different psychobehavioral correlates in buffering diabetes-related disability development.

Methods: Participants aged from 50 to 97 years old were drawn from Taiwan Longitudinal Study in Aging (TLISA). Disability was measured in 1999, 2003, and 2007, while health promotion behaviors and psychological factors were measured in 1996, 1999, and 2003 to be lagged time-varying covariates in random effect model analyses.

Results: Data on 581 diabetes patients and 3934 participants without diabetes were analyzed. For diabetic patients, mobility impairments occurred at the age of 57–58, which was 5 years earlier than those without diabetes; ADL disability occurred at the age of 73–74, which was 10 years earlier than those without diabetes; IADL disability occurred at the age of 61–62, which was 9 years earlier than those without diabetes. Age-related disability in diabetic patients was significant only in the mobility model ($\beta_{DM*age}=0.088$, $p<.001$). The disability progression speed in diabetic patients was 1.5 times faster than that in those without diabetes. Exercise postponed the occurrence of disability in diabetic patients for 9.9–13 years in the ADL model ($\beta_{DM*Exercise1}=-1.134$, $p=.0215$; $\beta_{DM*Exercise3}=-0.872$, $p<.001$). In the mobility and IADL models, exercise had a dose effect. Exercising more than 6 times a week postponed mobility impairments for 5.7 years ($\beta_{DM*Exercise3}=-1.248$, $p=.011$) and IADL disability for 4.4 years ($\beta_{DM*Exercise3}=-0.799$, $p=.034$). In the multiple factor model, exercise for more than 6 times a week decreased two third of the speed of mobility impairments ($\beta_{DM*Exercise3*age}=-0.129$, $p=.013$). Strong social support (score ≥ 10) postponed ADL disability for 19.4 years ($\beta_{DM*socalsupport}=-0.081$, $p<.0001$) and IADL disability for 12 years ($\beta_{DM*socalsupport}=-0.114$, $p=.003$). Depression accelerated ADL disability at least 15 years ($\beta_{DM*CESD}=0.0523$, $p=.0041$) and the speed of disability 4.5 times faster every year ($\beta_{DM*CESD*age}=0.008$, $p<.0001$). When the factors of exercise, social support, and depression coexisted, each of them was significant in the models. When all factors coexisted, stress was significant decreased ADL ($\beta_{DM*stress}=-0.348$, $p=0.026$) and IADL ($\beta_{DM*stress}=-0.465$, $p=0.040$) disability risk.

Conclusion: The current study shows that exercise, adequate stress and social support play important roles in postponing disability in diabetic patients. Depression triggers disability and accelerate disability progression rate in diabetic patients. Diabetic patients are strongly suggested to exercise more than six times a week.

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10:30 AM–11:30 AM

SOCIAL RELATIONSHIPS AND METABOLIC SYNDROME IN CAMBODIANS WITH DEPRESSION AND DIABETES RISK: BASELINE DATA FROM THE DREAM STUDY

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Aims: Social alienation (SA) is a form of interpersonal and societal estrangement linked to history of victimization. We examined associations between SA, social support (SS) and metabolic syndrome (MetS) among Cambodian genocide survivors.

Methods: Participants recruited in New England were adult Cambodian-Americans alive during the Pol Pot era (1975–1979), with elevated diabetes risk per self-reported risk quiz, and who endorsed either medication for depression or persistent elevated depressive symptoms per Hopkins Symptom Checklist. Measures. Four SA items were feeling ‘detached or withdrawn’, ‘loss of openness’, ‘isolated’, and ‘lonely’. Responses were standardized and summed; factor analysis showed a single factor; Chronbach’s alpha = 0.69. Five SS items assessed instrumental, informational, emotional, companionship, and affection support; responses were summed. Factor analysis showed a single factor; Cronbach’s alpha = 0.76. MetS was defined by International Diabetes Federation Asian cutpoints: waist circumference > 90cm (men) > 80cm (women) or body mass index > 30 plus any 2 of: triglycerides > 150, high density lipoproteins < 40 (men) < 50 (women), systolic blood pressure > 130 or diastolic > 85, and fasting glucose > 100. A MetS continuous score summed number of criteria, 0–7.

Results: Participants (n = 187) were age M = 55.2 (8.8) years, 78% women, 50% married, 87% Buddhist, modal income < \$20,000, education M = 6.9 years, 87% spoke Khmer at home, MetS score M = 2.1 (1.2). MetS score was correlated with SA, $r = 0.17$, $*p < .05$, but not SS, $r = -0.09$, $p = .20$. Univariate ANOVA with SA as the independent variable, MetS score as the dependent variable, covarying age and gender, was significant, $F(3,188) = 2.96$, $*p < .05$. SA was a significant predictor of MetS score, $*p < .05$. Neither age nor gender were predictors, p ’s > .10. An SA*gender interaction term was significant, $*p < .05$ showing a stronger relationship between SA and MetS among men than women. A separate model with SA as the independent variable, MetS score as the dependent variable, covarying age, gender, and SS was marginally significant, $F(4,188) = 2.30$, $p = .06$. SS was not a significant predictor of MetS, $p = .56$. An SA*SS interaction term was not significant, $p = .66$.

Conclusion: Among Cambodian-Americans with depression and diabetes risk, social alienation increased risk for MetS and this relationship was stronger in men. Social support was not related to MetS and did not buffer against the deleterious effects of social alienation.

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D187

10:30 AM-11:30 AM

STARVATION AND LATER RISK FOR PSYCHOLOGICAL DISTRESS AND DIABETES AMONG SURVIVORS OF THE POL POT REGIME

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Aims: Famine exposure may increase risk for type 2 diabetes later in life. We examined whether, among Cambodian-Americans, history of starvation is associated with present day trauma symptoms and A1c level.

Methods: Participants were adult Cambodian-Americans with elevated diabetes risk per self-reported risk test, and who endorsed medication for depression or persistent elevated depressive symptoms per Hopkins Symptom Checklist. They were recruited from New England into a clinical trial and provided baseline biological measures and responded to surveys. Measures: Participants reported level of starvation during four time periods: before 1970 (peacetime), 1970-75 (American bombing campaign, widespread hunger), 1975-79 (Pol Pot regime, mass starvation) and 'now'. Level of starvation was assessed using a 5 point scale with simple pencil drawings of body shapes ranging from overweight (1) to emaciated (5). Trauma symptoms were measured using the Khmer language Harvard Trauma Questionnaire (HTQ) and the Broken Courage and Self-erosion subscales of the Bakstbat questionnaire which assesses a Cambodian culture-bound syndrome similar to but distinct from post-traumatic stress disorder. Anthropometrics were measured by trained study staff with calibrated equipment twice and averaged. A1c was measured using high pressure liquid chromatography.

Results: Participants (n=189) were 78% female, age M=56 (SD=9) years, BMI M=27 (SD=4), A1c M=5.5 (SD=0.4). Modal body shape by time period was normal (43%) before 1970, normal and thin (33% each) 1970-75, emaciated (65%) 1975-79, and normal and slightly overweight (41% and 39%) now. Body shape 'now' significantly correlated with current anthropometrics: waist circumference ($r=-.34$, $p<.01$), body weight ($r=-.50$, $p<.01$), waist-to-hip ratio ($r=-.34$, $p<.01$), and BMI ($r=-.50$, $p<.01$). Body shape 1975-79 significantly correlated with current trauma symptoms: HTQ ($r=.40$, $p<.01$), Broken Courage ($r=.28$, $p=.01$), and Self-erosion ($r=.23$, $p=.02$), whereas body image during other periods did not (all p 's $>.30$). Linear regression models adjusted for age and current waist circumference found that body shape 1970-75 ($\beta=.20$, $p=.008$) and 1975-79 ($\beta=.21$, $p=.005$) predicted A1c, whereas before 1970 and 'now' did not.

Conclusion: The body image scale is a valid measure as indicated by correlations with anthropometrics. History of more severe starvation 4-5 decades ago is predictive of higher present day trauma symptoms and higher A1c.

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D188

10:30 AM-11:30 AM

IDENTIFYING TREATMENT ADHERENCE PROFILES AMONG TYPE 2 DIABETES PATIENTS USING LATENT PROFILE ANALYSIS

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Medication and physical activity (PA) are beneficial for Type 2 Diabetes (T2D) management. Lifestyle changes can reduce T2D incidence more than medication alone, but health practitioners tend to prescribe medication over lifestyle changes, given better patient adherence to medication compared to PA (Armstrong et al., 2010; Knowler et al., 2002; Sabate, 2003). Thus, practitioners may view medication as a more important component of treatment than PA; whether some patients make a similar trade-off, and what characterizes such patients, is unknown. Some patients may engage in the multiple treatment behaviors that are prescribed to them, whereas others may prioritize one treatment behavior over others. We hypothesize that categories of patients exist (i.e., adherent to both medication and PA; adherent to medication but not PA; adherent to PA but not medication; adherent to neither medication nor PA). We also hypothesize that adherence profiles will be categorized by how patients conceptualize their illness (i.e., timeline, identity, concerns, consequences, perceived control: see Common-Sense Model of Self-Regulation (CSM-SR); Leventhal, Phillips, & Burns, 2016). Additionally, we will explore whether adherence profile will predict HbA1c, an objective measure of T2D management. In a sample of 76 patients with T2D, medication adherence and PA were assessed objectively for one month, using MEMS bottles and accelerometers, respectively. Latent Profile Analysis was conducted to examine adherence profiles. The best fitting model had of two profiles (AIC= 1636.95; BIC= 1653.27; entropy= .879; LMR= 25.17, $p=.037$). Adherence profiles were categorized by differences in PA: low PA profile averaged 3140.76 steps per day; high PA profile averaged 9357.23 steps per day. Mean medication adherence was similar across both profiles (i.e., low PA profile: adherent 72.79% of days; high PA profile: adherent 89.36% of days). We ran a one-way MANOVA to determine whether adherence profiles differed on CSM-SR variables (i.e., timeline, identity, concerns, consequences, perceived control). The overall model was not significant, $F(5,66) = 0.761$, $p = .581$, $\eta^2 = .055$. There were no significant between-subjects effects of adherence profile on CSM-SR variables. Lastly, HbA1c levels were not significantly predicted by adherence profile, $F(1,71) = 3.30$, $p = .073$, $\eta^2 = .044$. Thus, some patients may be more adherent to certain components of their treatment plans, but what characterizes these adherence decisions remains unclear. It is possible that adherence in our sample was too high to detect differences among CSM-SR variables and HbA1c, warranting further research in a sample with higher variability. Adherence profiles may provide a foundation for future interventions to improve treatment adherence.

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10:30 AM–11:30 AM

ANXIETY AS A MODERATING MEDIATOR IN THE ASSOCIATION BETWEEN EFFORTFUL CONTROL AND ADOLESCENT TYPE 1 DIABETES-RELATED DISTRESS.

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Introduction: Research indicates that nearly one-third of adolescents experience type 1 diabetes-related distress. This distress has been associated with lower rates of glycemic control, self-efficacy, and self-care (Hagger, Hendrick, Sturt, Skinner, & Speight, 2016). In addition to diabetes-related distress, individuals with diabetes are at higher risk of developing anxiety (Buchberger, Huppertz, Krabbe, Lux, Mattivi, & Siafarikas, 2016). Research suggests effortful control, the ability to modulate cognitions, emotions, and behaviors toward a goal, is associated with both improved glycemic control (Berg et al., 2014; Lansing et al., 2016; Perez et al., 2016) and outside of the diabetes context decreased anxiety (van Oort et al., 2011). Yet, there is little research examining the intersection of effortful control, anxiety, and diabetes-related distress. It was hypothesized that increased effortful control would be associated with decreased diabetes-related distress in part through decreased anxiety, and that the conditional indirect effect would be stronger when anxiety was higher than average compared to lower than average.

Methods: Adolescent participants from a type 1 diabetes summer camp (n=79, M age=15.1, 61% Female) completed a multi-measure survey including a subscale of the Early Adolescent Temperament Questionnaire-Revised, measuring effortful control (Ellis & Rothbart, 2011), Problem Areas in Diabetes (Polonsky, et al., 1995), and the Revised Children's Manifest Anxiety Scale, Second Edition (Reynolds & Richmond, 2008).

Results: Regression analyses indicated that greater effortful control was associated with decreased diabetes-related distress ($b=11.30$, $t(72)=2.78$, $p=.01$) and that greater anxiety was associated with increased diabetes-related distress ($b=.98$, $t(74)=6.30$, $p<.001$). The association between effortful control and diabetes-related distress became nonsignificant ($b=-3.29$, $t(72)=-1.10$, $p=.28$) when anxiety ($b=.99$, $t(72)=5.38$, $p<.001$) was simultaneously entered, consistent with anxiety as a mediator of that association. Furthermore, anxiety also moderated the association between effortful control and diabetes-related distress ($b=-.82$, $t(72)=-2.69$, $p=.009$), such that the association between effortful control and diabetes-related distress was only significant at greater than average levels of anxiety.

Conclusions: Individuals with higher than average levels of anxiety and low levels of effortful control may be at elevated risk for increased diabetes-related distress compared to those with higher than average levels of anxiety and greater effortful control and those with lower than average levels of anxiety at all levels of effortful control.

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10:30 AM–11:30 AM

OLDER BLACK MEN'S PERSPECTIVES ON FACTORS THAT INFLUENCE TYPE 2 DIABETES (T2D) SELF-MANAGEMENT AND PEER-LED INTERVENTIONS

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Background: Older African American men are at increased risk of Type 2 Diabetes (T2D) but demonstrate high rates of poor illness management. They also participate in interventions targeting illness management at extremely low rates and are at high risk for dropout from clinical trials. One modifiable factor that has been identified in the literature that contributes to these disparities is health beliefs particular to men. Yet, despite the fact that illness management interventions have been developed to meet the needs of African Americans, none have followed recommendations to use gender-sensitive programming to meet the needs of men. The primary aim of this study was to advance our understanding of the intersection of age, race/ethnicity and gender on T2D self-management among older African American men with T2D and to explore their preferences for a peer-led T2D self-management intervention.

Methods: and analysis: Two focus groups were conducted with older African American men (n = 16) over a 6-month period. Sessions lasted 90 minutes, were audiotaped, and analyzed using thematic content analysis techniques using a phenomenological approach.

Findings: Three themes emerged which included (a) the influence of gender values and beliefs on health behavior; (b) quantity and quality of patient-provider communication; (c) social and structural barriers to T2D self-management; and (d) preferences for peer-led T2D self-management interventions.

Conclusions: Results suggest that gender values and beliefs, patient-provider communication and social and structural barriers may have implications for T2D self-management in older African American men and that this population may be receptive to a peer-led T2D self-management intervention.

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10:30 AM–11:30 AM

AN INNOVATIVE APPROACH UTILIZING AADE7 AND GROUP MEDICAL VISITS

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Diabetes is a chronic condition that is primarily self-managed and lifestyle modifications such as diet, exercise, and weight management are necessary to reduce morbidity and mortality. Rural populations with low socioeconomic status are at high risk of poor diabetes control, decreased self-management, and development of complications.

Purpose: The purpose of this project was to implement and evaluate an evidence-based group medical visit program for adult patients with type 2 diabetes in a rural health clinic.

Participants: Convenience sampling of sixty-five participants attended group medical visits weekly for a six-week period. Participants were adults, eighteen years of age and older, diagnosed with uncontrolled Type 2 diabetes mellitus and Hemoglobin A1C (HbA1C) > 7.5.

Methods: Data were collected for the HbA1C values at baseline, three and six months post intervention. To measure knowledge of each participant, a diabetic knowledge test was administered before participating in the group medical visits and upon completion of the program.

Data Analysis: Descriptive statistics and paired sample *t*-tests were computed to analyze data.

Results: The project demonstrated improvement in diabetic knowledge and HbA1C levels at baseline, three months and six months post intervention.

Conclusion: Self-care management behaviors improved with enhanced knowledge and demonstrated improvement in HbA1C. Results of this project found to be comparable and indicates group medical visits offer an opportunity to bridge the gap in diabetic education and self-care management in diabetes.

Keywords: group medical visits, Type 2 diabetes, self-care management, behavior change, AADE7 Self-Care Behaviors

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DIABETES RISK FACTORS AND CELLULAR AGING IN OVERWEIGHT AND OBESE ADULTS: NHANES 1999-2002

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Objective: High body mass index (BMI) and type 2 diabetes have both been independently associated with telomere length, a marker of cellular aging, in population-based studies. However, overweight and obesity are important risk factors for subsequent risk of type 2 diabetes and accelerated telomere shortening may provide a link between these chronic conditions. We examined cross-sectional associations between diabetes risk factors and leukocyte telomere length (LTL) in national sample of overweight and obese adults.

Methods: Data for the study came from the 1999-2002 National Health and Nutrition Examination Surveys (NHANES). The study population comprised 1,170 overweight and obese (BMI >25 kg/m²) adults (ages 20-50 years) without a prior diagnosis of diabetes. LTL was assayed from DNA samples purified from whole blood, collected from adult NHANES participants who consented to genetic analysis. Diabetes risk factors included fasting glucose, fasting insulin, homeostatic model assessment for insulin resistance (HOMA-IR), and hemoglobin A1c (HbA1c). Multivariable logistic regression models were used to examine associations between diabetes risk factors and log-transformed LTL, adjusting for sociodemographic characteristics, health behaviors, and BMI. Complex survey weights were used in all analyses.

Results: After adjusting for sociodemographic characteristics and health behaviors, higher fasting insulin was associated with shorter LTL ($\beta = -0.001$, 95% CI -0.003, -0.000, $P = 0.049$) and higher HOMA-IR was associated with shorter LTL ($\beta = -0.005$, 95% CI -0.009, -0.001, $P = 0.02$). Fasting glucose and HbA1c were not significantly associated with LTL.

Conclusions: In overweight and obese non-diabetic adults, markers of insulin resistance but not fasting glucose were associated with shorter LTL. These results suggest that telomere shortening may be a mechanism linking high BMI to elevated risks of type 2 diabetes. Future research should explore these associations in a longitudinal study to better understand the extent to which telomere shortening is on the causal pathway between obesity and type 2 diabetes.

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10:30 AM-11:30 AM

BARRIERS, FACILITATORS, ACCESS AND DISTRESS EXPERIENCED BY PEOPLE WHO ARE BLIND AND HAVE DIABETES

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Background: Although diabetes is the leading cause of blindness and people who are blind are twice as likely to be diagnosed with diabetes than non-disabled people, there is limited literature examining how people who are blind and have diabetes manage their chronic disease.

Methods: This study examined chronic disease self-management strategies and barriers experienced by people who are blind and have diabetes. Thirty-one such participants responded to an online survey about their experiences managing their diabetes.

Results: A thematic analysis on open-ended responses revealed the following overarching categories: Access and Reliability (29% of responses), Facilitators to Self-management (27%), Distress (24%), and Barriers to Self-management (20%). Participants expressed concerns regarding the cost, availability with insurance, accuracy, and inaccessibility of medical technology. Participants described how they check their blood sugar, take their medication, eat a healthy diet, and exercise. A few participants did mention intersectional distress related to managing their diabetes as blind people. Finally, participants described barriers to self-management including managing a healthy diet and checking blood sugars.

Discussion: Moving forward, researchers and policy-makers should work with people who are blind and also have diabetes in order to develop medical technology and policy that support the development and dissemination of reliable, accurate, and adequate medical technology. These findings also have implications for training healthcare providers to prepare people who are blind to independently manage their diabetes.

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10:30 AM-11:30 AM

TRADITIONAL AND CONTEMPORARY CORRELATES OF BODY IMAGE DISSATISFACTION IN A PREDOMINANTLY LATINX COLLEGE SAMPLE

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To be concerned about one's body shape has shown to be a risk factor for substance use problems. Current research on the growth, problematic usage, and addictive properties of social media has resulted in new literature that investigates its association with body image dissatisfaction. The present study aimed to assess these traditional and contemporary addictive behavioral correlates of body image dissatisfaction in a Hispanic/Latinx college student sample.

College students ($N = 742$, $M_{age} = 21.17$, $SD = 3.89$, 71.6% female, 84.1% Hispanic/Latinx) completed the informed consent process and completed the following assessments: demographics, the Body Shape Questionnaire (BSQ), smoking status, alcohol, diet pills, and energy drink past month usage, social media use frequency, selfie and groupie posting and viewing frequency, the Selfitis Behavior Scale, and the Bergen Social Media Addiction Scale.

The first linear regression, which assessed the relationship between the traditional addictive behaviors and body image dissatisfaction, was not statistically significant, $p > .05$. The second linear regression assessed the relationship between social media behaviors and body image dissatisfaction. Participant age ($\beta = .090$, $p < .05$), sex ($\beta = .191$, $p < .01$), social media addiction ($\beta = .207$, $p < .01$), and selfie viewing ($\beta = .130$, $p < .05$) were significantly associated with increased body image dissatisfaction.

That only social media addictive behaviors were correlated with increased body image dissatisfaction may suggest a possible shift in coping behaviors from traditional addictive behaviors. That body image dissatisfaction was associated with older and female participants suggests findings are consistent with the literature in other ethnic/cultural groups. That social media addiction and selfie viewing were associated with increased body image dissatisfaction suggests a possible negative effect of increased exposure to idealized images on social media platforms, which may be highlighting the thin ideal. The constant enforcement of this belief system may be negatively influencing body image perceptions for those who do not perceive meeting their desired shape. Prospective studies should assess the temporal relationships between social media behaviors and body image dissatisfaction.

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10:30 AM–11:30 AM

THE ROLE OF PSYCHOLOGICAL NEEDS AND SELF-REGULATION WITH FOOD ADDICTION SYMPTOMS: A SELF-DETERMINATION THEORY PERSPECTIVE

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Introduction: Research has consistently highlighted that the transition to college confers increased risk for unhealthy eating and weight change for a significant subset of students. Self-Determination Theory (SDT) has helped to elucidate self-regulation/motivational factors and basic psychological needs that are beneficial to mental and physical health outcomes. Importantly, satisfaction of needs (i.e., competence, relatedness and autonomy) has been associated with a healthier diet and eating patterns, whereas need thwarting experiences may be implicated in the etiology of disordered and dysregulated eating. As needs become thwarted, individuals may be at risk of engaging in compensatory behaviors such as excessive or uncontrolled eating. Attention has been increasingly directed toward behavioral addictions within the current diagnostic nosology (DSM-5), with one such form presenting as food addiction – directed toward uncontrolled and problematic consumption of highly processed foods (e.g., pizza, chocolate, chips). On the surface, food addiction appears consistent with compensatory behaviors that stem from need thwarting, though to our knowledge the relationships between food addiction, self-regulation and basic psychological needs have not been examined. Thus, the current study examined the relationships between these variables.

Methods: Undergraduate freshmen ($n = 350$; 55% females) in their first semester of college completed questionnaires on global psychological need satisfaction and frustration, weight management self-regulation, food addiction symptoms (Modified Yale Food Addiction Scale), and BMI.

Results: Relatedness satisfaction ($r = -.13$, $p = .01$) and food addiction symptoms ($r = .17$, $p = .002$) were associated with BMI. Food addiction symptoms appeared more clearly associated across bivariate correlations (controlling self-regulations $r_s = .24$ to $.32$, $p_s < .001$; needs satisfaction $r_s = -.16$ to $-.31$, $p_s < .01$; needs thwarting $r_s = .23$ to $.47$, $p_s < .001$). Hierarchical multiple regression indicated that of the SDT constructs, competence thwarting robustly predicted greater food addiction symptoms ($\beta = .38$, $p < .001$) followed by relatedness thwarting ($\beta = .15$, $p < .05$) and BMI ($\beta = .13$, $p < .01$). Regression analyses indicated that introjection and external regulation partially mediated the relationship between relatedness thwarting and food addiction symptoms, though this effect appeared trivial.

Discussion: Psychological needs and motivational regulations proposed by SDT are linked to food dependence symptomatology. Other factors may also influence the development of these symptoms and more research is warranted to understand how these form over time.

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10:30 AM–11:30 AM

VISUAL CUES AND FOOD INTAKE: A PREREGISTERED REPLICATION

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Background: A landmark study by Wansink, Painter, and North (2005) found that visual cues affect food intake, while controlling for BMI, sex, and retrospectively reported baseline hunger. Specifically, they found that a biased visual cue (imperceptible self-refilling soup bowl) increased food intake compared to an accurate visual cue (normal soup bowl). Due to questions raised about the validity of the findings, we conducted a preregistered direct replication (<https://osf.io/ux42g>) to examine if actual food intake and estimated food intake significantly differed based on the visual cue condition.

Method: Participants ($N = 255$; age range = 18 to 54; mean BMI = 24.15; 80.3% female) were recruited to eat soup for lunch in groups of four. Participants were randomized to one of two conditions: 1) accurate visual cue (normal soup bowl) or 2) biased visual cue (self-refilling soup bowl). Those in the biased visual cue condition ate from modified soup bowls that imperceptibly refilled. ANCOVAs assessed the effect of condition (accurate vs. biased) on the study outcomes, controlling for BMI, sex, and retrospectively reported baseline hunger.

Result: Participants in the biased visual cue condition ate more soup as measured in ounces [11.49 ± 6.82 vs. 9.39 ± 6.59 oz; $F(1, 245) = 6.29$, $p = .013$] and calories [258.62 ± 153.53 vs. 211.36 ± 148.17 cal; $F(1, 245) = 6.29$, $p = .013$] than those in the accurate visual cue condition. Although they consumed 22% more, they believed they had consumed less in ounces [4.83 ± 6.84 vs. 7.11 ± 8.60 oz; $F(1, 249) = 5.32$, $p = .022$] but not in calories [110.67 ± 117.60 vs. 123.55 ± 100.71 cal; $F(1, 249) = 0.59$, $p = .443$] compared to those in the accurate condition.

Conclusion: We replicated the finding that a biased visual cue increases food intake. Participants who ate from the self-refilling soup bowl ate more in ounces and in calories than those who ate from the normal soup bowl, although the effect sizes we observed were smaller than that of Wansink's (e.g., 47 kcal difference here versus 113 kcal in Wansink et al.). In contrast to the original study, we found that those who ate from the self-refilling bowl estimated that they ate fewer ounces of soup than those who ate from the normal bowl. Overall, our results support the original finding that visual cues impact food intake over satiety. This replication effort is important because the original study has been cited over 600 times and has influenced policy (e.g., USDA, the military, and school lunchrooms) and consumers (e.g., 100 calorie snack packs).

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D197

10:30 AM-11:30 AM

WASTE WATCHERS: A FOOD WASTE REDUCTION INTERVENTION FOR ARIZONA FAMILIES

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Introduction: In the US, 45 million tons of food are wasted at the household level, equating to roughly \$28 per week for the average family of four. Because the largest proportion of wasted food in the home comprises fruits and vegetables, these losses represent missed opportunities to eat healthfully. Further, they may contribute to climate change as organic matter breaking down in landfills is the third largest source of anthropogenic methane emissions in the US. Recent estimates suggest up to 60% of home food waste is avoidable, making households an ideal location for intervention to decrease environmental impact and family income losses, and support healthy eating simultaneously.

Methods: Fifty-three adults, self-identified as the primary food purchasers in their home, participated in the Waste Watchers study. The intervention consisted of asking participants to interact with a website designed for this study that provided key information and strategic tools presented in a variety of formats including downloadable content, podcasts, infographics, videos, and text-based information. Researchers developed a standard protocol which was used to train participants on how to collect and log their family's food waste at home throughout the duration of the study. Participants also completed surveys on food waste behaviors and behavior change constructs (e.g. norms, intentions) pre- and post-intervention, and engaged in an in-depth exit interview during the follow-up. Quantitative data was assessed with Wilcoxon rank tests and Spearman correlations due to non-normality. Qualitative data was transcribed verbatim, coded, and examined for major themes.

Results: At the end of the study, a significant decrease in logged food waste was observed (19.19 oz vs. 10.36 oz, $z = -2.39$, $p = .017$). Significant improvement was also observed in all behavior change constructs under study (all $p < .01$), and these constructs in turn were significantly associated with lower food waste ($r_s = -.28$ to $-.42$, all $p < .05$). Major themes emerging from interviews included increased awareness, behavior change, saving money, and family involvement.

Discussion: A 5-wk online food waste intervention was effective in changing behavior-related psychological constructs and food waste-related behavior among Arizona families. Our team will continue exploring the effectiveness of our intervention on other populations and is currently developing a model that guides future food waste research.

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D198

10:30 AM-11:30 AM

PINNING, PLANNING, PREPARING MEALS: PARENTAL CHILDHOOD FEEDING PRACTICES AND PINTEREST

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Social media platform Pinterest is used extensively for searching for and sharing recipes, yet little is known about the specific use of the platform for this purpose, and about the specific child feeding practices of Pinterest-using parents. With childhood obesity being an epidemic - 20.8% of children in eighth grade are obese and an additional 17.0% are overweight – understanding how parents may use Pinterest as a recipe source and how that may be associated with their child feeding practices is important.

Child health factors and practices are explored through a survey among a national sample of 1119 U.S. Pinterest using parents of children ages 3-14. Participants completed a Qualtrics survey focused on child feeding practices as well as their use of Pinterest related to recipes and preparing meals.

Early results show that 83.6% of respondents actually make recipes they find on Pinterest: 30.8% at least monthly, 37.6% at least weekly, and 15.2% daily; in addition, 50% post new recipes, and 75% share recipes on the platform. Half reported their child is a picky eater on some level, and 61.4% answered that if they did not regulate their children's eating, they would eat too much junk food. This study is ongoing – the complete results will report on specific types of foods present in households, over-and underweight concerns, and eating habits of both adults and children in the household, and on any present associations with the frequency and type of Pinterest use related to recipes and preparing meals.

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D199

10:30 AM–11:30 AM

USING GROUP CONCEPT MAPPING TO IDENTIFY BARRIERS TO AND FACILITATORS OF USING A MOBILE FRUIT AND VEGETABLE MARKET INTERVENTION

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Using Group Concept Mapping to Identify Barriers to and Facilitators of Using a Mobile Fruit and Vegetable Market Intervention

Background: Interventions addressing neighborhood- and individual- level barriers to fruit and vegetable intake within racial/ethnic minority and low-income communities have demonstrated mixed success. Therefore, the objective of this study was to identify the barriers to and facilitators of using Fresh to You, a mobile fruit and vegetable market delivered to ethnically diverse, low-income housing communities as part of the Live Well/Viva Bien intervention.

Methods: We used Group Concept Mapping, a structured, participatory research methodology designed to represent group ideas visually. Ninety residents from five housing communities that received Fresh to You markets participated in concept mapping sessions. Participants generated, sorted and rated statements concerning barriers to and facilitators of market utilization. In post hoc analyses, we compared the rating data between residents with high and low levels of market utilization.

Results: Eight clusters emerged from concept mapping including: 1) financial/promotion barriers; 2) produce barriers; 3) scheduling/knowledge barriers; 4) logistic/awareness barriers; 5) produce/staffing barriers; 6) multilevel market facilitators; 7) market promotion facilitators; and 8) market accessibility facilitators. There was a strong correlation of agreement in the perceived importance of the clusters ($r = 0.94$) between groups with high and low levels of market utilization. Additional post hoc analysis identified the most important (and actionable) statements across high/low market utilization groups; all but two of these 26 statements were facilitators. The facilitator statements identified by participants related to the diversity, quality, aesthetics and low cost of fruits and vegetables and to family health promotion (e.g., concern for family health). Participants identified community norms (i.e., seeing other people shopping in the markets) as facilitators of their own market utilization behaviors.

Discussion: These results indicate the need for more asset-based community-engaged approaches that focus on facilitators of market utilization in low-income communities receiving healthy food environment interventions. Furthermore, the common facilitators identified as most important across differing market utilization groups could inform the development and implementation of future fruit and vegetable interventions in low-income communities.

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D200

10:30 AM–11:30 AM

WHAT'S IN A BINGE? CHARACTERIZING THE CONTENT OF BINGE EPISODES AMONG A TREATMENT-SEEKING SAMPLE OF INDIVIDUALS WITH BED

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Binge eating disorder (BED; characterized by recurrent episodes of loss of control eating) is strongly associated with numerous health (e.g., Type II diabetes) and psychological consequences. However, despite the large body of research in this area, there has been very little research on the composition (e.g. types of food) of binge eating episodes. Strengthening empirical knowledge of this kind would help to maximize the effectiveness of treatments that seek to target patients' relationships with specific foods (i.e. inhibitory control training, food exposure). Despite the strong implications of this work, no study to date has examined the composition of binge episodes in a BED population. One reason that this may be the case, is that there is no existing measure that characterizes the content of binge episodes. As such, we adapted a Food Frequency Questionnaire (FFQ), asking participants to report food consumed during binge episodes, in order to examine the composition of binge episodes in a treatment seeking BED sample ($n=55$). Results indicated that participants, on average, reported bingeing on 25.35 ($SD=14.30$) unique foods in the previous month. The foods that appeared most frequently across all participants, in descending order of the number of participants that reported bingeing on the given the food, included: cheese, cookies/brownies, chocolate candy, potato chips, and pizza. Next, our team categorized the FFQ items into sweet snacks, savory snacks, and entrees to examine the distribution of these categories. On average, participants reported bingeing on 5.22 ($SD=2.52$) unique sweet snack foods, 6.25 ($SD=2.76$) unique savory snack foods, and 7.75 ($SD=6.48$) unique entrée foods over the past month. Nearly all participants experienced at least one binge episode that was comprised of sweet snacks (96%; $n=53$) and one of savory snacks (96% $n=53$). Fewer, but still the vast majority of participants (87%, $n=48$) reported bingeing on foods categorized as entrees. In summary, patients with BED tend to binge on a high variety of foods. Knowledge regarding the composition of binge episodes will help to inform future assessment protocols and interventions such as food exposure and inhibitory control training (ICT). Future research seeks to utilize these findings to develop assessment protocols that more effectively capture the composition of binge episodes in order to customize ICT and food exposure treatments to the individual, maximizing their effectiveness.

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D201

10:30 AM-11:30 AM

AFFECTIVE REACTIVITY MEDIATES RELATIONSHIP BETWEEN STRESSORS AND BINGE EATING: AN ECOLOGICAL MOMENTARY ASSESSMENT STUDY

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Binge eating disorder affects up to 3.6% of Americans at some point during their lifetime and is thought to be maintained by increases in negative affect. Although affective reactivity, or increases in negative affect in response to a stressor (AR), is known to predict momentary risk of binge eating, little is known about antecedents of AR that increase momentary risk of binge eating. This study is among the first to assess the impact of different stressors on AR and subsequent binge eating using ecological momentary assessment. Adult women with clinically significant binge eating ($N=16$, BED [43.75%]; BN [56.25%]) recorded their mood, eating, and four types of stressors (i.e., interpersonal, work/school, financial, and other [e.g., daily life hassles]) over two weeks. Because there is no standard definition of a significant level of stress in the literature, we defined a clinically significant level of stress as an increase in negative affect of at least 1SD above an individual's mean level. Multilevel modeling evaluated the relationship between presence of stressors at time1, change in negative affect from time1-time2 (AR), and binge eating reported at time3 while controlling for binge eating prior to time3. Work/school stressors (33.33%) occurred more than interpersonal (25.39%), other (20.63%), and financial stressors (3.17%). Multiple stressors were also reported at 34% of surveys. AR significantly mediated the relationship between increases in interpersonal stressors ($\beta=0.13$, $\chi^2=3.73$, $p=0.05$, $OR=1.13$) and work/school stressors ($\beta=0.06$, $\chi^2=4.23$, $p=0.04$, $OR=0.94$) and subsequent binge eating. AR did not significantly mediate the relationship between financial stressors ($\beta=0.09$, $\chi^2=1.76$, $p=0.18$, $OR=0.94$) or other stressors ($\beta=0.01$, $\chi^2=0.001$, $p=0.97$, $OR=0.99$) and subsequent binge eating. These findings demonstrate that AR mediates the relationship between interpersonal stressors and work/school stressors and binge eating. Thus, it may be important for treatment providers to target interpersonal and work/school stressors when addressing mood-related binge eating. The results of this study are an important step in developing momentary interventions to 1) minimize the risk for triggers for negative affect and 2) deliver personalized and targeted strategies to manage stressful events. Further research should identify types of interpersonal stressors (e.g., family relationships, friendships) that may differentially promote AR and precipitate binge eating.

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D202

10:30 AM-11:30 AM

IMPACT OF A COMMUNITY HEALTH CAMP ON ADOLESCENT NUTRITION KNOWLEDGE, COMMUNITY HEALTH AWARENESS, SELF-EFFICACY AND BEHAVIOR

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In urban areas, youth often face significant health disparities and preventable poor health outcomes because of health, education, social and economic disparities, including higher than average rates of obesity, physical inactivity and unhealthy eating. Well-trained community health practitioners who are able to work in lower income and marginalized communities are needed to elicit long-lasting sustainable change and disrupt health inequity. Unfortunately, many young people do not know about the field and practice of community health. The Youth Advancing Community Health (YACH) program provided no-cost, city-wide experiential learning activities for adolescents, which were designed to increase healthy eating, promote food access within the city, and provide exposure to a variety of community health methods and career paths focused on food and nutrition. This study reports on outcomes (knowledge, awareness, self-efficacy, behavior) from the YACH week-long summer camps. Paired samples t-tests were used to evaluate change from pre (T1) to post (T2) program on all variables. Eighty-three students registered for the camp, and 52 youth had both T1/T2 data available for analysis. Questionnaire and program completion did not vary by age, GPA, grade, gender, race or free/reduced lunch status. The analysis sample was primarily African American ($n=35$; 72.9%) and female ($n=39$; 78.0%) with an average age of 15.4 ± 1.2 years. Participants were from multiple high schools in a large metropolitan area, had an average GPA of $3.2 \pm .61$ and 78.7% ($n=37$) received free/reduced lunch. Nutrition knowledge score (min: 0, max: 10) ranged from 1-8 at T1 and from 0-10 at T2. After one week of programming, participants knowledge (T1: $M = 5.10$, $SD = 1.89$; T2: $M = 6.04$, $SD = 1.95$) significantly increased ($t(50) = -3.10$, $p = .00$, $d = .43$), as did self-efficacy to improve eating habits ($t(47) = -2.64$, $p < .01$, $d = .38$) and cook healthy foods ($t(48) = -2.52$, $p < .01$, $d = .36$). Awareness of the field of community health (CH) ranged from 1-4 at both T1 and T2, and significantly increased (T1: $M = 2.53$, $SD = .69$; T2: $M = 3.31$, $SD = .85$; $t(48) = -4.76$, $p = .00$, $d = .68$). When asked if they plan to eat more fruits and vegetables 78.4% said yes, 15.7% said maybe, and 56% said they planned on starting a home garden. Results show that a short program using community health methods and tools and a focus on food can yield significant improvements in adolescent knowledge, attitudes and behavior.

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D203

10:30 AM-11:30 AM

GROCERY SHOPPING BEHAVIORS IN INDIVIDUALS WITH FOOD INSECURITY

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Introduction: Grocery shopping behaviors (e.g., cooking frequency, frequency of trips) have been associated with healthfulness of food purchases and thus have implications for weight and diet-related health. Food insecurity has been associated with increased risk for overweight and obesity and this population often has to overcome financial, geographic, and education barriers to make healthy food choices. Individuals with food insecurity are more likely to live in food deserts (i.e., lack of surrounding healthy food providers) and rely more frequently on corner stores that are less likely to carry fresh produce. The aim of this study was to examine grocery shopping behaviors and assess the feasibility of online grocery shopping in individuals with food insecurity to better inform diet and weight-related interventions in this population. We hypothesized that participants cook and grocery shop frequently but that a majority of participants do not utilize online grocery shopping services.

Methods: 53 participants with food insecurity from single-person households (age = 45.85±12.70; BMI = 28.54±6.37; 75% male) recruited from food pantries in New York completed a baseline survey prior to participating in an intervention aimed at improving the healthfulness of grocery purchases.

Results: Nearly all participants (98%) reported that they had access to a kitchen in their home and a majority of participants reported cooking either always (48%) or often (33%) during the week. A majority of participants reported grocery shopping at least twice a month (68%) and over half of the participants reported that they have a budget for grocery shopping (59%), with an average monthly budget of \$127.17 (SD= \$81.83). Most participants reported that they have never used online grocery shopping services (89%) but over half of participants reported that they would consider using online services (60%).

Discussion: Most participants reported cooking frequently during the week and nearly all participants had access to a kitchen in their home, which further demonstrates the importance of interventions that target diet in the home. Additionally, most participants reported that they would consider using online grocery shopping services, which could potentially serve as a new platform for interventions in this population. Researchers have recently developed online grocery shopping interventions for this population so it is promising that a majority of participants are open to using these services.

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D204

10:30 AM-11:30 AM

FOOD-RELATED VALUES AND ABILITIES AMONG FOOD SECURE AND INSECURE COLLEGE STUDENTS

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Food insecurity disproportionately affects low-income and minority students and increases risk of poor academic (e.g., GPA, time to graduate, drop-out rates) and health outcomes 1, 2. While there are programs available (e.g., food pantries, food discounts), many students do not access resources 3. Research is needed to better inform how to meet the needs of FI students.

We examined food-related values and abilities among food secure (FS, n=50) and insecure (FI, n=19) college students. We used the Meaning of Food in Life Questionnaire (MFLQ4) to assess food values in 3 distal- (social (food tied to relationships), moral (food choices affect the world), sacred (spiritual beliefs)) and 2 proximal- (health (nourishing my body), and aesthetic (meal as work of art)) domains. We assessed objective (nutrition knowledge test) and subjective (self-reported nutrition label use, nutrition knowledge, and healthy-eating confidence) factors. Food insecurity was assessed using an 8-item measure 5; never or rarely experiencing food insecurity=FS; sometimes or often = FI.

Food values were analyzed in a 2(Security Status: FS, FI) x 5(Domain: 1-5) MANOVA. We found an effect of domain, $F(5,61)=2.42$, $p<.05$, $\eta^2=.16$, with between-subjects effects for Aesthetics only, $F(1,65)=10.4$, $p<.01$, $\eta^2=.14$. In a series of ANOVAs, we found that self-reported use of labels did not differ by status, $F(1,65)=2.1$, but FI reported lower levels of nutrition knowledge than did FS, $F(1,65)=6.5$, $p<.01$, $\eta^2=.09$. Confidence in one's ability "to eat the foods that I know to be more healthful" did not differ between groups, $F<1$; however, "to plan and prepare nutritious meals at home" was lower among FI than FS, $F(1,65)=5.7$, $p<.05$, $\eta^2=.09$. Finally, FI scored lower on the nutrition knowledge test than did FS, $F(1,65)=7.2$, $p<.01$, $\eta^2=.10$.

We had expected proximal- to be lower than distal- domains among FI students. While true for the aesthetics, FI and FS students did not differ on the health domain. Similarly, self-reported use of labels, reflecting motivation more than skill 6, did not differ between groups, but self-reported and objective measures of nutrition knowledge were lower for FI than FS. Thus, FI students value health, are motivated to use nutrition information, and are self-aware of their knowledge and meal-preparation short-comings. Findings suggest that meeting the needs of FI students may include helping them learn skills needed to improve healthy eating.

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D205

10:30 AM-11:30 AM

LONGITUDINAL ASSESSMENT OF EAT-26 AND WEL IN A BEHAVIORAL WEIGHT LOSS INTERVENTION

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Background: There is conflicting evidence on whether behavioral weight loss programs improve or worsen eating disorder symptomology. Eating self-efficacy may influence calorie consumption and could be a mechanism through which those susceptible to binge eating reduce loss of control eating behaviors. This study examined changes in eating attitudes and self-efficacy for eating control in participants enrolled in an 18 month behavioral weight loss program.

Methods: Adults with overweight and obesity (N= 393; BMI= 34.87 ± 4.80 ; age= 43.83 ± 10.10) participated in the 18-month intervention. The weight loss phase, 0-6 months, consisted of energy restriction (1,200-1,500 kcal/day) achieved using portion-controlled meals and increased physical activity. During weight maintenance, 7-18 months, participants consumed a diet designed to maintain weight loss. Educational sessions were conducted weekly during the weight loss phase and reduced to twice per month during months 7-9, monthly during months 10-12, and every other month during months 13-18. The 26-item Eating Attitude Test (EAT-26) and the 20-item Weight Efficacy Lifestyle (WEL) questionnaire were administered at baseline, 6, 12, and 18 months. Mixed effect models were used to examine longitudinal changes in the EAT-26 and WEL scales. Age, sex, and BMI were included as covariates in the models. Completion of weight measures at 18-months was considered a potential moderator.

Results: There were significant increases in the EAT-26 scores ($p < .001$) and WEL scores ($p < .001$) across time. EAT-26 scores were significantly different from one another at all time points (M = 4.52, 11.86, 10.51, 9.31; SE = .23, .43, .37, .37). WEL scores were significantly different in all time points, except between 12-months and 18-months (M= 143.17, 147.52, 136.58, 134.62; SE= 1.45, 1.13, 1.55, 1.56). There were no moderating effects of completion for either model.

Conclusions: Increases in the EAT-26 scores demonstrate that as participants lose weight and restrict energy intake they may develop disordered eating attitudes or behaviors. The WEL model indicates that self-efficacy drops once participants enter the 12-month maintenance phase when the intervention intensity (frequency of meetings) decreases. Future research should examine components of weight loss programs that impact disordered eating patterns, and how self-efficacy for eating control could be informative based on the type of disordered behaviors and attitudes that emerge.

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D206

10:30 AM-11:30 AM

RETHINKING ABANDONMENT OF HEALTH APPS USING EATING DISORDERS AS A CASE STUDY

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System abandonment is an increasing concern, especially for health and health-care care where continuity of care is central to chronic care management and health behavior changes. However, system lapses and even abandonment can be beneficial to some users when we consider mental health and well-being a primary goal of any health system. Given the popularity of health apps that track diet, physical activity, and weight, one case is presented - diet and fitness apps in the context of eating disorders - to highlight the need to expand what encompasses "happy abandonment" by prioritizing mental health. In order to investigate the role of app lapses and abandonment, qualitative think-aloud exercises and interviews were conducted with 24 college women with eating disorder-related behaviors who had experience using diet and fitness apps. Audio was transcribed and then analyzed using thematic coding.

Findings reveal that diet and fitness apps support users in achieving goals that are explicitly supported by the app, such as improved awareness of food and calorie content, consistent and long-term app engagement, and changed behavior (e.g., reduced calorie intake, increased calorie expenditure, weight loss) through persuasive visualizations, but at the same time unintentionally negatively impact users' mental health. Rather than support users to be healthier, self-tracking exacerbated and sometimes even triggered eating disorder-related behaviors, such as restriction, compensatory behaviors, rigid diet, obsessive thoughts, and extreme negative emotions. Because of this, users often took a break from or abandoned diet and fitness apps. Sometimes users themselves decided abandonment was necessary, and other times, a loved one decided for them. Users reported that ceasing app use functioned as a form of "happy abandonment" by improving their mental health and general well-being. This research has socio-technical implications for how we promote engagement and encourage use. Thus, we should consider ways to build in lapses and even abandonment as part of a user's journey with the system to ensure health and well-being.

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D207

10:30 AM–11:30 AM

SECURE MESSAGING FOR MEDICATION RECONCILIATION TO PREVENT RE-HOSPITALIZATION

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Background: Medication discrepancies occurring during transition from acute hospital settings to home often lead to adverse drug events and re-hospitalization. The Secure Messaging for Medication Reconciliation Tool (SMMRT) was developed to identify and reconcile medication discrepancies during transition from hospital to home using secure messaging within the VA's electronic patient portal. This study aimed to evaluate the SMMRT's usability and effectiveness via qualitative interviews.

Methods: 240 patients were recruited from VA acute hospital settings or sub-acute rehab centers before discharge. Patients were randomly assigned to receive Usual Care (UC) or UC + SMMRT intervention. Patients assigned to the intervention used the SMMRT listing their medications via secure messaging after discharge. Patients were asked to confirm their medication list and return the tool for review by a clinical pharmacist to reconcile discrepancies. Twenty patients were randomly selected to offer their perspectives on the usability and effectiveness of SMMRT through in-depth interviews. Interviews were conducted within two months of completion of the intervention and patients were asked to reflect on their experiences using the tool.

Results: Twenty male patients with an average age of 62 years were interviewed. Racial background was reported as 65% white and 35% "other." Prior use of secure messaging was reported by 80% of patients interviewed, while 20% reported rarely using a computer with no secure messaging experience. 88% looked at the SMMRT on their home computer, yet only 45% returned the SMMRT via secure messaging. Patients who did not return the SMMRT reported barriers with using the technology (70%) and time constraints after discharge (30%). Patients who did not return the SMMRT talked about their difficulty with computers, e.g.: "I'm not a computer man. I can turn them on and off pretty good." Those who returned the SMMRT without difficulty said things like, "I thought it was simple and no problem at all." Other comments included "It helped me to understand my dosages a little better and get my regimen on track."

Conclusion: While most patients used the SMMRT to review their medications once home, technology related issues, likely due to the varying levels of computer literacy among our study population, were found to be the greatest barriers to returning the tool for clinical review.

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D208

10:30 AM–11:30 AM

SCREEN TIME, MENTAL AND PHYSICAL HEALTH: ARE ALL SCREENS CREATED EQUAL IN YOUTH?

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Over the past decade, concurrent with advancements in technology screen use has increased dramatically. Widespread use has spurred a growing body of literature aimed at understanding the possible influences of screen time; however, the speed of technological advancement has so outstripped research progress that the nuance of how specific elements of screen-based life shape psychological and physical health during development are poorly understood (Orben & Przybylski, 2019; Stiglic & Viner, 2019). Current guidelines recommend limiting screen time to less than 2 hours for 5 to 17-year olds (American Academy of Pediatrics, 2016; Tremblay et al., 2016). The empirical support for these recommendations is unclear and more research is needed to better understand the quantity of differing screen media and its impact on physical and mental well-being (Ferguson & Beresin, 2017).

The purpose of this study was to examine screen time media and its association with psychological and physical health indicators. Whereas previous research and guidelines have focused primarily on total screen time and television viewing, this study investigated the possible contribution of a) watching television, b) playing videogames or using a computer, and c) using a tablet or smartphone (mobile screen).

Participants were 369 children and youth aged 7 to 16 ($M = 12 \pm 1.7$) years, recruited from elementary and middle schools. Self-report ratings were collected for leisure-time hours per day spent with the three modes of screen media. Outcome measures include self-report sleep, diet, health quality of life, life satisfaction, and perceived stress. Accelerometer assessed steps/day were also assessed.

Descriptive analyses showed the mean hours per day watching television, playing video/computer games and using smartphones recreationally, were 1.81 ($SD = 1.34$), 1.98 ($SD = 1.61$), and 2.33 ($SD = 1.53$), respectively. Correlations were conducted between different screen time media and measures of psychological and physical health. All three modes of screen media were associated with poorer diet and lower life satisfaction. However, unlike television watching, playing video/computer games and using mobile screens were associated with poorer diet, and health-related quality of life, higher perceived stress, and less physical activity. Regression analyses indicated that after controlling for age and sex, mobile screen use explained additional unique variance.

Overall, these results suggest that specifying the type of screen media used may be more essential for adequately capturing the complexity of factors that contribute to health and well-being than total screen time than using total screen time. Future research can further extend our understanding by examining the specific content of screen media that is being accessed and the possible influence this may have on physical and mental health in young people.

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10:30 AM-11:30 AM

PRESENCE OF SAFETY DISCLAIMERS IN INSTAGRAM POSTS ABOUT PHYSICAL ACTIVITY DURING PREGNANCY

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Physical activity (PA) is recommended during pregnancy and has numerous health benefits, yet not all exercises are safe throughout pregnancy or for all women. The majority of young women use Instagram, and pregnancy is a popular topic. Women may try exercises seen on Instagram that are not appropriate for them, especially if a user with health-related expertise recommends the activity. We conducted a content analysis of Instagram posts about PA during pregnancy to examine the presence of PA safety disclaimers. We reviewed public Instagram posts by searching pregnancy-related hashtags in fall 2018, resulting in a sample of 600 posts about PA during pregnancy. We excluded posts no longer available online at time of content analysis (n=8) and then randomly selected one post per user, resulting in an analytic sample of 511 posts. We coded safety disclaimers, user claims of expertise, and other post characteristics by reviewing post text, images, hashtags, and user profile (all posts double-coded; 84-100% agreement; discrepancies adjudicated by 3rd reviewer). Safety disclaimers were defined as language about avoiding/modifying exercises, warning signs/symptoms, or encouragement to check with a medical professional before attempting the activity. We grouped claims of health-related expertise as licensed professionals (e.g., OBGYN, MD, RN), credentials not requiring licensure (e.g., personal trainer, health coach), or no expertise claimed. We compared the presence of safety disclaimers by post characteristics using chi-squared tests. Few (13.7%) of posts included a safety disclaimer. Presence of PA safety disclaimers differed by claims of health-related expertise (15.4% of posts by users claiming licensed credentials, 22.8% of posts by users claiming non-licensed credentials, 8.9% of posts by users with no claimed expertise; $p=0.0002$). Nearly a quarter (23.7%) of posts recommending exercise had a safety disclaimer vs 10.4% of posts sharing a personal pregnancy experience and 0% that were neither sharing personal experience nor recommending exercise ($p=0.0001$). Presence of safety disclaimers did not differ by whether the user was pregnant (13.7% pregnant vs 13.9% not; $p=0.9548$). Few public Instagram posts about PA during pregnancy include a safety disclaimer. Prenatal care providers may wish to talk to pregnant women about vetting information they see online regarding PA as part of encouraging women to be physically active during pregnancy.

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10:30 AM-11:30 AM

SUPPORTING PATIENTS TO STICK WITH IT: A POST-COMPLIANCE TELEHEALTH PROGRAM FOR PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

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Background: Obstructive sleep apnea (OSA) is characterized by repeated cessations of breathing while sleeping. Left untreated, consequences of the disease are profound. Patients diagnosed with OSA are most often prescribed continuous positive airway pressure (PAP) therapy. Adherence to therapy declines precipitously over time with some estimates indicating just 50% of patients are using therapy regularly after one year. Most medical device suppliers and insurers are focused on getting patients through the compliance period. Following the compliance period, patients may or may not receive support to stay on therapy. This pilot program is testing whether an existing compliance support program can be expanded to the post-compliance period, and intervene among patients who show signs of dropping off of therapy (via a prediction model).

Methods: A sleep coach team trained in motivational interviewing techniques and self-determination theory reaches out to patients on ResMed devices. Patients are eligible to be contacted if they: are post the 90-day compliance period; have met compliance within the last six months; have received at least one previous coaching session in the last six months; and, based on recent therapy use, are predicted likely to quit therapy in the next 30 days. Once contacted, sleep coaches ask a series of survey questions to prompt a coaching conversation as well as collect data on barriers to therapy use. Patients are asked to set a therapy goal, and sleep coaches follow up within one week after initial contact. After eight weeks, a second survey is administered.

Results: Patients included in this preliminary analysis are those who have completed a baseline survey (N = 70). The most frequently endorsed barrier to maintaining therapy use was travel followed by recent illness, hospitalization or surgery. Patients also commonly reported physical and/or technical barriers including mask fit, therapy comfort, and mask leak. In terms of expectations of therapy use, patients' lowest endorsement was related to the belief that consistent therapy use would improve their ability to concentrate. Most patients reported only occasionally devising and sticking to a plan to incorporate therapy use into their bedtime routine. Approximately half of the patients surveyed agreed to set a goal to use therapy more regularly. Descriptive statistics as well as change in barriers to therapy use will be examined when the pilot is complete in January, 2020. The primary outcome of interest, objectively measured therapy use, will also be examined for change over time.

Conclusion: PAP therapy is difficult to sustain over time. Telehealth coaching services may be able to address some, but not all, of patients' barriers to nightly therapy use.

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D211

10:30 AM–11:30 AM

THE REACH STUDY: LONG-TERM EFFECTS OF A TAILORED TEXT MESSAGING INTERVENTION FOR DIABETES SELF-CARE AMONG DIVERSE ADULTS

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Non-adherence to self-care for type 2 diabetes (T2D) is associated with adverse outcomes; the prevalence of non-adherence is high, especially among racial/ethnic minorities and patients with low socioeconomic status. Given its ubiquity, text messaging is a practical approach for extending self-care support and improving adherence for patients most at risk. Text messaging interventions have improved adherence, but few have been evaluated in long-term trials or with diverse populations. We conducted a 15-month randomized controlled trial to evaluate the effects of a theory-based, tailored text messaging intervention on diabetes self-care and A1c.

We recruited patients with T2D (N=512) from community health centers and an academic medical center. Participants were randomly assigned to REACH (Rapid Education/Encouragement And Communications for Health) or a control condition. REACH participants received text messages assessing and promoting self-care for 12 mos. All participants completed surveys and A1c tests at baseline and 3, 6, 12, and 15 mos. Surveys included measures assessing medication adherence and diabetes self-efficacy. We used generalized estimating equation and linear regression models to test the effects of REACH on diabetes outcomes.

Participants were 54% female, 53% non-White, and on average, 56.0 (SD 9.5) years old. Nearly half (42%) had ≤ a high school degree, 56% had annual incomes < \$35K, and 49% were underinsured. At 12 mos., median response rate to interactive texts was 91% [IQR: 75–97]. At 15 mos., retention was 90% across conditions. REACH improved A1c (%) compared to the control group at 6 mos. ($-0.31, p = 0.039$); we observed greater reductions in A1c at 6 mos. among patients with higher baseline A1c. We did not find evidence of effects on A1c at 12 and 15 mos. Relative to controls, REACH improved medication adherence at 6 mos. (0.41 days/week, $p < 0.001$) and 12 mos. (0.27 days/week, $p = 0.020$), though we did not find evidence of an effect at 15 mos.; diabetes self-efficacy improved at 6 mos. (0.71, $p = 0.022$) only.

The REACH Study had excellent long-term retention and intervention engagement among diverse adults with T2D. The intervention improved medication adherence, self-efficacy and A1c at 6 mos.; however, we did not find evidence for sustained effects on self-efficacy or A1c. Text messaging interventions are highly scalable with potential to impact population health and may engage patients at high risk for poor outcomes. Research seeking to sustain effects at 12 mos. and beyond may need to incorporate additional intervention components.

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10:30 AM–11:30 AM

RECRUITMENT AND RETENTION STRATEGIES FOR RESEARCH WITH RURAL PREGNANT ADOLESCENTS: QUALITATIVE INTERVIEWS WITH WIC PROVIDERS

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Background and Purpose: Public health stakeholder engagement is integral to developing effective public health interventions. The perspectives of women in the Supplemental Nutritional Program for Women, Infants and Children (WIC) have often been sought when designing WIC-based interventions; however, the perspectives of WIC providers are underrepresented. The purpose of this study was to explore the context of counseling adolescent WIC clients and to identify strategies for recruitment, retention and engagement of adolescents in a WIC-based mobile health (mHealth) antenatal exercise intervention.

Objective: To elucidate strategies tailored for low-income and racial minority adolescent WIC clients in the Mississippi Delta.

Methods: Qualitative interviews were conducted with WIC providers (N=9) serving mostly Black clients across 14 of 18 Mississippi Delta Counties. The Delta is a geographically and culturally distinct rural region in northwest Mississippi where the population is predominantly Black, of low-socioeconomic status, and bears a disproportionate burden of poor health outcomes compared to the rest of the state. The Interview Protocol Refinement Framework was used to develop the interview guide and a qualitative descriptive approach guided analysis.

Results: Four themes emerged: early recruitment and retention through WIC are possible; family involvement and compensation may bolster participation in a WIC-based intervention; transportation and misperceptions about exercise may be barriers to engagement; and a mobile intervention approach may be effective when intervening with adolescents.

Discussion: Four testable hypotheses (*Hyp*) for future study were developed. *Hyp1:* Recruiting adolescents in early pregnancy to participate in a WIC-based exercise intervention study is feasible. *Hyp2:* Supplementing adolescent-focused intervention strategies with an interpersonal parental component supports adolescent engagement and retention. *Hyp3:* Compensating adolescent/parent-dyads with items related to caring for an infant enhances recruitment and retention. *Hyp4:* A mHealth intervention disseminating brief, positive messages fosters participant engagement and retention. WIC providers offered critical insight in understanding the context for a mHealth exercise intervention implemented through WIC. Investigators are currently conducting interviews with adolescents and parents to corroborate these hypotheses and garner further insight.

Conclusion: Formative research to understand the experiences and perspectives of front-line public health practitioners offers valuable insight when planning for an intervention study. Public health entities serving vulnerable populations at high risk for adverse health outcomes may be ideal settings for the recruitment, retention and engagement of populations underrepresented in health research.

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10:30 AM-11:30 AM

DOES RURAL LATINO TECHNOLOGY USE DIFFER ACROSS AGE GROUP? A FORMATIVE STUDY

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Introduction: The use of mobile health (mHealth) interventions as a strategy to improve population health has grown considerably as access to smartphones and internet access has become more ubiquitous. mHealth interventions may be especially relevant for those living in rural areas where there are geographic barriers to health care access. Furthermore, the cultural appropriateness of mHealth interventions for Latinos—the fastest growing population in the U.S.—has not been widely studied. Thus, this concurrent mixed methods study assessed how rural-dwelling Latinos engage with technology regarding health and determine if and how engagement differs by age group.

Methods: We administered a survey of 31 demographic and technology engagement questions and conducted one-on-one semi-structured interviews in Latinos living in a primarily agricultural region of Washington State. We calculated descriptive statistics to describe differences in engagement across four age categories: 18-29, 30-39, 40-49, and >50. Transcribed interviews were uploaded into Atlas.ti. Two coders applied a content analysis approach to identify emergent themes across and within age groups.

Results: Thirty participants completed a survey and interview. Participants ranged between 18-80 (mean=43.5), were mostly female (86.7%), and averaged 11 years of formal education. Compared to the 30-39 and >50 age groups, a higher proportion of participants 18-29 and 40-49 reported weekly access to a computer, and 100% of participants reported at least weekly internet access. Across all age categories, a greater proportion of participants reported looking for health information using their smartphone compared to using a computer. Participants aged 40-49 demonstrated the lowest proportion of those who download apps to improve their health and the highest proportion of those who used social network applications. In qualitative interviews, participants of all ages said they used on-line technology to become more educated about health behavior change; they preferred video technology and private messaging over internet searches, text messages, or discussion boards. Participants tended to conduct internet searches about complementary therapies for cancer and approaches for prevention and management of chronic disease. Participants (>40) described searching for health information for themselves, whereas participants aged 18-39 reported primarily searching for relatives.

Conclusion: The vast majority of rural Latinos in Washington State reported regular access to the internet, primarily via smartphone. Differences between age groups was observed in terms of how participants used the information they obtained via technology, but not necessarily how they accessed that information. These data can be used to inform mHealth interventions to improve health outcomes among this underserved community.

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D214

10:30 AM-11:30 AM

RESULTS FROM A RANDOMIZED CONTROLLED TRIAL ON TWO-WAY SMS TEXT MESSAGING BETWEEN NURSE CARE MANAGERS AND PATIENTS

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Most Americans not only send and receive text messages, but text messaging has been the most common form of communication for over a decade (Gallup, 2014). However, these communication trends have presented challenges within health-care systems that must comply with privacy and compliance regulations such as HIPAA. At UPMC Health Plan, we conducted surveys with 242 clinical staff in 2017 to assess texting behavior. These data revealed that our practice-based nurse care managers (PBCMs)—who are part of the PCMH model of care and provide care coordination and case management services—were often sending and/or receiving text messages with members. This research further revealed clinical staff had a strong desire for more education and guidance regarding texting with members. Based on these initial findings, we conducted a Randomized Controlled Trial (RCT) in 2018 to understand the feasibility and efficiency of text messaging between PBCMs and members. PBCMs were randomly assigned to the experimental group, in which they were encouraged to text with members and provided with training and materials prepared in collaboration with our compliance team, or to a control group where they were instructed to continue business as usual. In total, we had 51 PBCMs complete at least one of the three biweekly surveys over the 6-week pilot period. Interestingly, we found no significant difference between the percentage of PBCMs who texted at least once with a member, in which 59% of the experimental and 46% of the control group reported one or more instances texting with a member, $\chi^2(1, 51) = .9, p = .4$. Those in the experimental group sent a marginally higher average of texts per week ($M = 3.1, SD = 2.3$) compared the control group ($M = 1.5, SD = 1.4$) average texts per week, $F(1, 18) = 3.58, p = .07$. Further, PBCMs were texting twice as many members in the experimental group ($M = 1.3, SD = .8$) compared to the control group ($M = .6, SD = .4$), $F(1, 18) = 2.9, p < .05$. We conducted a qualitative analysis of open-ended response items related to PBCMs experiences with texting and identified various themes, such as improved work efficiency and reaching members who would otherwise be lost contacts. These pilot findings have helped inform new guidelines and training which are now being deployed across various clinical staff in conjunction with our privacy and training teams. Further implications and future research will be discussed.

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10:30 AM–11:30 AM

A MICRO-RANDOMIZED TRIAL OF JUST-IN-TIME ADAPTIVE INTERVENTION MESSAGES NUDGING WEIGHT-RELATED BEHAVIORS IN YOUNG ADULTS

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While digital tools enable the design of just-in-time adaptive interventions, there is limited evidence guiding the content of intervention messages. The current study tested the efficacy of just-in-time intervention message options on daily weighing, activity, and dietary behaviors.

We recruited young adults to participate in a 12-week intervention using the Nudge mobile app, which included weekly lessons and tailored feedback, self-monitoring, and in-app intervention messages. Participants received a wireless scale, activity tracker, and tracked “red” foods (high-calorie, high-fat foods) in the app. Participants had 3 goals: weigh daily, a daily active minutes (AM) goal that gradually increased if met, and a daily red food (RF) limit. At 4 daily decision points, participants were micro-randomized to receive or not receive 1 of 7 types of intervention messages targeting specific behavior change techniques (BCTs). Each intervention option had unique decision rules for availability. We evaluated the effect of receiving and viewing messages on daily achievement of weighing, AM goals, staying at/below RF limit, total AM, and total RFs consumed (GEE, controlling for availability and accounting for repeated within-person measurements).

Participants were 52 young adults ($M_{age} = 29.5 \pm 3.8$ years; $M_{BMI} = 31.9 \pm 4.3$ kg/m², 79% female, 35% minority). Out of 84 total days, participants on average weighed 66.7 ± 18.2 days, tracked AM on 68.7 ± 16.3 days and RFs on 54.8 ± 23.0 days. Of 6182 total messages delivered, 4112 (66.5%) were viewed. On average, participants viewed 67.5% of messages received ($M_{received} = 118.9 \pm 19.0$, $M_{viewed} = 79.1 \pm 28.7$). Receiving and viewing any message type (vs. randomized to not receive one) was associated with: increased likelihood of weighing the same day ($B = 0.40$, 95% CI: 0.12, 0.68) and staying at/below the RF limit ($B = 0.26$, 95% CI: 0.12, 0.41), 4.54 more daily AM (95% CI: 2.22, 6.88), and fewer RFs consumed ($B = -0.16$, 95% CI: -0.30, -0.04). When exploring outcomes by message type, achievement of AM goals was influenced by messages about past success, implementation intentions, and goal progress feedback, while RF consumption and tracking was influenced by messages regarding social comparison, past success, goal progress feedback, and tracking reminders ($ps < .03$). Viewing messages on outcome feedback and reinforcements was not associated with behavior changes. The effects of receiving and viewing intervention messages on behavior changes did not dissipate over time. Total message views were associated with weight loss after 12 weeks ($n = 50$; $B = -0.043$, $p = .01$).

Viewing BCT-targeted messages in an app that nudged achievement of daily weight-related goals effectively promoted behavior changes. Future studies should identify ways to increase message views, compare the effects of various message types on behavior change progress, and examine moderators of message effects.

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10:30 AM–11:30 AM

LOOK BEFORE YOU LEAP: IS AN MHEALTH INTERVENTION TO INCREASE IRON FOLIC ACID SUPPLEMENT DEMAND AND USE IN RURAL INDIA FEASIBLE?

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Background: Anemia is endemic among women of reproductive age (WRA) in India and Odisha with approximately half of all women impacted. The RANI project aims to increase iron folic acid use among WRAs in Angul, Odisha with mobile phone messages along with several other social and behavioral strategies. However, India has one of the widest digital gender divide with 67% of men owning mobile phones in comparison to just 33% of women.

Objectives: As such, we 1) assessed whether this nationally prevalent digital gender divide manifests regionally in Odisha as well, and 2) explored the feasibility of implementing an mHealth intervention.

Methods: We analyzed formative data from 2018 where a random sampling method was utilized to collect data on mobile phone use from 30 WRAs (15–49 years old), 30 males, and 30 mother(s)-in-law (MIL). Descriptive and Analysis of Variance (ANOVA) were conducted to assess differences among group means in mobile phone use. A step-wise multi-variate regression was conducted to identify predictors of phone use. Lastly, we conducted a literature review focusing on medication adherence mHealth interventions conducted in low-resource settings.

Results: MILs had significantly lower levels of phone use ($F = 31.40$, $p < 0.001$) in comparison to WRAs and males. Older females were significantly less likely ($\beta = -0.67$, $p < 0.05$) to use their phones regularly than older males. In contrast, being a member of Self-Help Groups was a significant predictor ($\beta = 0.22$, $p < 0.05$) of using phones more regularly. The literature review identified digital illiteracy, restrictive gender norms, illiteracy, geographical location, income, and network coverage as additional barriers that may impact the feasibility of our proposed mHealth intervention.

Conclusions: Informed by these findings, we decided to continue exploring the feasibility of an mHealth intervention by collecting and analyzing additional data. Our findings highlight the importance of looking before you leap when planning digital interventions in low-resource settings.

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10:30 AM–11:30 AM

CHARACTERIZING USAGE OF A WEB-BASED TOOL FOR PARENTS OF LOW-INCOME MINORITY PREADOLESCENTS AT-RISK FOR CHILDHOOD OBESITY

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Background: Childhood obesity research highlights the role of parents as a key support mechanism in improving child dietary outcomes. Web-based/mHealth interventions may be an engaging approach to promote positive dietary-related behaviors among parents of at-risk youth. *Intervention INC* is an intervention that includes access to weekly online parent newsletters to support healthy feeding practices, as well as an interactive web-based child nutrition comic aimed at improving dietary behaviors among urban Black/African American (AA) and Latino preadolescents. In addition to assessing key outcome measures, it is critical to analyze usage of these technology-optimized interventions to contextualize its adoption and impact on behaviors. As part of a pilot two-group randomized study, we aimed to characterize parent usage of *Intervention INC* by analyzing user log data collected over a 6-week intervention period.

Methods: Parents/guardians (n=45) of Black/AA and Latino children ages 9–12 were randomized to receive *Intervention INC* (online newsletters with healthy feeding tips, printable recipes, and links to healthy product coupons and community events, plus access to child comic). User log data was generated via a custom-built platform that captured every action (“click”) by participants including unique URLs and click date/time. As a key preparatory step, data transformation grouped URLs into “meaningful labels” relevant for usage analysis of key content. Participant-level click frequencies by intervention week/day were calculated to assess total usage, proportion of participants adherent to weekly use, patterns of individual use, and then define user types. Participant interviews post-intervention were also analyzed to confirm user types.

Results: Participant characteristics included: mean age 40.1±7.7 years, 96% female, 47% Black/AA, 40% Hispanic/Latino, 27% with less than a high school education; and 71% with a household income < \$40,000. Total weekly usage by all participants was highest in Week 3 (1900 clicks) and lowest in Week 5 (789 clicks). Total daily usage was highest on Day 1 of each week when an email/text reminder notification was sent to participants. Adherence to weekly use of the tool decreased after Week 1, with 100% viewing the newsletter and 91% the comic in Week 1, but an average of 44% returning to view newsletter content and 32% returning to view comic content over Weeks 2–6. Few participants accessed the weekly coupon, event link, or “print recipe” option (weekly average of 30%, 20% and 1% of participants, respectively). Based on usage patterns and interview data, different user types (i.e. “early dropouts,” “occasional-users,” regular-users) were identified.

Conclusions: Usage analysis of *Intervention INC* identified patterns of use by different user types. Insights will inform analysis of key outcome data and future enhancements to the intervention.

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10:30 AM–11:30 AM

#DOUBLETAP4HEALTH: PILOT OF A COMMUNITY-BASED SOCIAL MEDIA HEALTH PROMOTION PROGRAM FOR ADOLESCENTS

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Background: Multiple interventions target adolescents’ obesity-related preventive health behaviors (PHB) via psychoeducation, group exercise classes, targeting parents, and peer-based teaching. A growing catalog of interventions also use media (i.e., gaming and social media) to engage adolescents in obesity-related behavior change. However, the relationship between media and obesity is complex. Media use encourages engagement in obesity-related risk behaviors (e.g., high consumption of junk food) and is an obesity-related behavior itself (i.e., most media use is sedentary activity). Conversely, adolescents rely on media to acquire and share information about health behaviors. Targeting media health literacy (MHL; skills to recognize, critique, and apply media-delivered health information to decision-making) may provide adolescents with skills to (1) counter negative media messages and false information and; (2) apply health knowledge to engaging in obesity-related PHB.

Method: Five adolescents ($M_{age} = 14.40$, $SD = .89$, 100% Black or African American, 60% boys) participated in the pilot intervention, which included five sessions on MHL and behavioral strategies for engaging in obesity-related PHB. To practice MHL skills adolescents executed a health promotion campaign on Instagram. Measures were collected at pre- and post-test and included stage of change for, and engagement in obesity-related PHB (sleep, physical activity, health eating, and media use), health knowledge, and media literacy. Effect sizes were calculated.

Results: Due to the small sample size, only effect sizes were computed. Between pre- and post-test adolescents’ stage of change for fruits and vegetables intake ($d = .43$), junk foods intake ($d = .22$), sleep ($d = .63$), and sedentary activity ($d = .56$) improved, while their physical activity stage of change ($d = .40$) declined. Adolescents’ physical activity ($d = .20$), sedentary activity ($d = .45$), sleep ($d = .16$), sugar-sweetened beverages intake ($d = .12$), and junk food intake ($d = .25$) decreased from pre- to post-test, and their fruits and vegetables intake marginally increased ($d = .004$). Compared to pre-test, post-test health knowledge scores were lower ($d = .43$) but media literacy scores increased ($d = .21$). Overall adolescents had positive views of the intervention: they liked 80% of activities presented.

Discussion: These pilot results highlight the intervention’s potential to improve adolescents’ engagement in obesity-related PHB by targeting MHL skills. However, the physical activity and health knowledge content should be modified using feedback from participants prior to further intervention testing. Future studies should assess the effect of the intervention using an adequately-powered randomized controlled trial and employ social network methodology to examine the effects of adolescents’ social media campaign on their peers/friends’ behaviors.

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10:30 AM–11:30 AM

ORGANIZATIONAL READINESS FOR CHANGE AS A PREDICTOR OF MEASUREMENT FIDELITY WITHIN LOW-RESOURCE COMMUNITY PROGRAMS

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Introduction: Organizational readiness for change (ORC) is a commitment shared by organizational members to embrace program-level change. While ORC screening is widely implemented in the health service and clinical sectors, it is utilized less frequently in low-resource settings such as community-based programs. Second, while it is recognized that ORC affects program implementation, its impact on measurement fidelity (e.g., the collection of intervention outcome data) has rarely been considered. Focusing on a childhood obesity prevention intervention implemented in 23 Head Start centers, this study examines the relationship between center ORC and the percentage of eligible families completing the annual family enrollment survey, which integrated study outcomes. We predicted that families from centers with low ORC would exhibit lower survey completion rates.

Methods: Head Start staff from intervention centers completed a brief, adapted measure of ORC prior to intervention implementation ($n = 67$; mean per center = 7; range per center = 1–17). Constructs measured included emotional engagement, role-overload, principal support, change-specific efficacy, and appropriateness. Center-level mean, minimum and maximum ORC scores were calculated. Center-level variation in measurement fidelity, or the percentage of eligible families who completed the annual survey (which integrated outcome evaluation items), was the primary outcome of interest. Multilevel logistic regression was used to examine the center-level variation in ORC scores in relation to center-level measurement fidelity.

Results: Minimum ORC scores significantly predicted center-level variation in measurement fidelity, with lower ORC scores linked with lower survey completion rates (OR = 0.04, SE = 1.05, $p = 0.002$). However, this relationship was not identified for mean (OR = 0.27, SE = 1.88, $P = 0.49$) or maximum (OR = 2.60, SE = 0.96, $P = 0.32$) ORC scores.

Conclusions: Results suggest that the “weakest link” (i.e., the lowest individual-level staff readiness score) in a community implementation partner is most predictive of measurement fidelity at the program-level. Identifying and supporting individuals within partner organizations with low ORC may improve the validity of the program's evaluation.

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D220

10:30 AM–11:30 AM

BARRIERS TO THE IMPLEMENTATION OF THE REAL MEDIA PROGRAM TO PREVENT SUBSTANCE USE IN THE YOUTH 4-H ORGANIZATION

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Background: REAL media is an e-learning program to prevent youth substance use, grounded in media literacy theory and designed in partnership with and for the 4-H youth organization. Implementation is reliant on active involvement from state and local 4-H leaders during the recruitment phase to successfully enroll youth into the program. Upon enrollment, REAL media allows for self-paced instruction, requiring minimal engagement with 4-H leaders beyond facilitating youth involvement. In a recent RCT to evaluate REAL media, recruitment and implementation challenges were greater than expected which was surprising considering the commitment from the 4-H organization at the outset as well as a program design that required little time on the part of 4-H staff. Accordingly, the objective of this research was to examine barriers to the implementation of REAL media across participating clubs.

Methods: Data were collected from 4-H leaders ($N=31$) who were enrolled in the REAL media project as part of a larger RCT and completed a post implementation. Content analysis and thematic synthesis was used to examine survey responses, using the Consolidated Framework for Implementation Research (CFIR) as a theoretical framework.

Findings: Results indicated that leaders experienced inner setting barriers (e.g. difficulty obtaining parental consent on youth participation and recruiting youth) as well as technical challenges.

Conclusion: This research suggests that technology characteristics as well as organizational (e.g. communication across the organization about the program) and environmental (e.g. leadership engagement) alignment with barriers resulted in unanticipated implementation challenges among 4-H leaders. This has important implications for implementation of e-learning based prevention curricula with youth populations, and suggests that despite advantages of leveraging technology, in-person facilitation may be beneficial, and ongoing data collection to monitor implementation success is important for improving future efforts.

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D221

10:30 AM-11:30 AM

ASSOCIATIONS BETWEEN PROGRAM IMPLEMENTATION AND MEMBER HEALTH BEHAVIORS IN THE FAITH, ACTIVITY, AND NUTRITION PROGRAM

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Introduction: Health programs delivered through faith-based partnerships have great potential for reaching underserved populations and leading to positive health behavior changes. The Faith, Activity, & Nutrition (FAN) Program helps churches make policy, systems, and environmental changes for physical activity (PA) and healthy eating (HE) through four program components for PA and HE: (1) offering opportunities and programs, (2) setting guidelines (policies), (3) enlisting pastor support, and (4) sharing messages. To facilitate scaling up programs, more work is needed to understand relationships between implementation and program outcomes.

Purpose: This study examined relationships between member perceptions of program implementation and member PA and HE behaviors and PA and HE self-efficacy.

Methods: Church members (n=811) attending intervention churches participating in phase 1 of the FAN dissemination and implementation study, a group randomized control trial, completed questionnaires 9-12 months after implementation. Members answered questions regarding perceived implementation of three program components of FAN (opportunities, pastor support of program, messages), and PA and HE behaviors and self-efficacy. Mixed linear and logistic models were used to assess relationships between member perceptions of implementation and church member outcomes, controlling for member age, gender, and education, while also accounting for member clustering within the church.

Results: At follow-up, member perceptions of implementation of HE opportunities, but not messages or pastor support, was positively associated with HE self-efficacy ($F=17.16$, $p < 0.001$), cups per day of fruit and vegetables ($F=23.74$, $p < 0.0001$) and meeting fruit and vegetable recommendations (≥ 5 cups/day; $OR = 1.63$, 95% $CI = 1.16, 2.30$). Neither PA behaviors nor self-efficacy were associated with PA opportunities, messages, or pastor support.

Discussion: Member perceptions of fruits and vegetables being offered at church, but not perceptions of pastor support or promotional messages, were associated with eating fruits and vegetables, meeting fruit and vegetable recommendations, and healthy eating self-efficacy. This suggests providing opportunities may be an important strategy for promoting healthy eating in faith-based settings.

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CITATION AWARD WINNER

D222

10:30 AM-11:30 AM

IMPROVING CLINICAL USE OF PREBIOTICS AND PROBIOTICS IN NEONATAL AND INFANT NUTRITION THROUGH CONTINUING EDUCATION ACTIVITIES

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Gut microbiota is recognized as a virtual organ with effects extending past the gastrointestinal tract. Microbial colonization of the infant's gut begins prenatally, rapidly proliferating throughout infancy. Initial colonization is essential as the types of organisms with which the gut is colonized can have a profound effect on overall health and disease prevention.

Breastfeeding persists as the standard for infant nutrition, exclusively recommended for the first six months of life. In typically developing, full-term, breast-fed infants, the intestine is rapidly colonized with a variety of beneficial probiotic organisms, especially *Bifidobacterium* and *Lactobacillus*. Comparatively, preterm infants' intestine tend to be colonized by other types of bacteria, including coliforms, enterococci, and other *Bacteroides* species. Lower prevalence of *Bifidobacterium* and *Lactobacillus* in preterm infants has prompted the use of probiotics in the prevention of necrotizing enterocolitis (NEC).

Breast milk is central to addressing nutritional needs in the neonatal intensive care unit (NICU), however, administration of probiotics as a method of preventing NEC and other adverse neonatal outcomes is clinically supported with a beneficial risk-benefit balance. Moreover, many mothers do not breast-feed for as long as recommended or at all, and instead rely on formulas for nutrition, including in the NICU setting when one's own or donor milk is not available or feasible to provide. Because of the pace of research and product development, clinicians may not be familiar with the proliferation of infant feeding and supplementation choices.

To address this clinical gap, we developed, implemented, and evaluated the effectiveness of four instructional webinars, all informed by relevant professional association guidelines on the use of prebiotics and probiotics in neonatal and infant nutrition. Collectively, they aimed to explain the: (1) role of the microbiome and gut microbiota, (2) current understanding of the pathogenesis of NEC and implications for prevention and treatment, and (3) use of prebiotics and probiotics in the NICU.

Participating clinicians ($n = 471$) mostly identified as nurses or physicians with pediatrics and primary care specialties. To assess education effectiveness, intent-to-change questions were asked after webinars, regarding past and planned use of clinical practice strategies. Paired-sample t-tests compared use, revealing significant increases in planned practice for assessed strategies in prebiotics and probiotics in neonatal and infant nutrition (past: $M = 3.10$ (Sometimes), $SD = 1.023$; planned: $M = 3.51$ (Very Often), $SD = 0.980$; $t(470) = -9.948$, $p < .001$). Results suggest the webinars positively affected clinicians' perceived intent to incorporate into practice new understandings of the role of the gut microbiome on neonatal growth and development.

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D223

10:30 AM-11:30 AM

DISCREPANCIES BETWEEN FAMILY HEALTH HISTORIES COLLECTED BY A VIRTUAL VERSUS HUMAN GENETIC COUNSELOR: COMPUTER OR HUMAN ERROR?

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Although digital tools are readily available to facilitate the collection of family health histories (Welch et al, 2018), few have undergone systematic evaluations to determine the accuracy of the family histories that are collected, particularly among underserved patient populations. Family histories collected by genetic counselors are often deemed as the “gold standard” for accuracy, yet little is known about the potential sources of error that may occur in family history documentation regardless of how it is collected. The present study compared 135 family health histories collected by both a virtual counselor and a human genetic counselor as part of a randomized trial in order to evaluate the following: 1) type of discrepancies that exist, 2) variation of discrepancies across health conditions, and 3) source of discrepancies (error). Overall, family histories collected by the virtual counselor were in agreement with histories collected by the human genetic counselor (weighted kappas range: .58 - .71 for general health conditions among first degree relatives), however, discrepancy patterns were noted across conditions. Several conditions including addiction, alcoholism, heart disease, and hypertension were more frequently documented by the virtual counselor than the genetic counselor. The opposite was true for mental health conditions and diabetes, which were more frequently documented by the genetic counselor. An audit of genetic counselor (GC) interviews (20% selected) identified several sources of error which might explain the discrepancies noted: 1) GC omission (didn't ask about heart disease or hypertension), 2) patient nondisclosure (GC asked but patient didn't disclose addiction/alcoholism) and 3) GC failed to record condition after patient disclosed. Comparing across collection methods revealed possible program design issues in how the virtual counselor inquired about a condition that may have contributed to some discrepancies. Study findings highlight the potential value of using virtual counselors to collect family history information that might be inconsistently ascertained by a human or potentially stigmatizing and embarrassing to disclose. These results can inform the development and refinement of digital tools that may serve as a critical supplement in the collection of family health histories in clinical practice.

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10:30 AM-11:30 AM

RAISING AWARENESS OF SUGAR CONSUMPTION AND CHRONIC DISEASE RISK: AN ECOLOGICAL APPROACH TO HEALTH COMMUNICATION

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Background: Sugar-sweetened beverages (SSBs) are the largest source of added sugars in the Latino diet, contributing to high rates of chronic disease and cancer risk. Latinos' excessive SSB consumption is the result of targeting by the soda industry. Similarities to sugar and tobacco have been made. Tobacco behavior change was a result of multilevel interventions supported by strong public policies. A critical first step was raising awareness of the harms of smoking. Similarly, efforts aimed at reducing SSB overconsumption are gaining momentum as SSBs are increasingly recognized as a chronic disease risk factor. Thus, raising awareness of the association between SSBs and chronic disease among Latinos may help reduce its consumption.

Aim: To examine the effect of culturally relevant messages on knowledge about health problems caused by excessive SSB consumption among young adult Latinas (N=433, aged 18-29) using a pre and posttest survey design.

Methods: Participants viewed persuasive online messages about individual harms of SSB. The main outcome was knowledge of the association between SSB consumption and a variety of chronic diseases. We hypothesized that messages would increase knowledge about the negative health consequences explicitly mentioned in the videos.

Results: At baseline, participants had high levels of knowledge regarding SSB-related diseases. However, less than half of participants reported an association between SSB consumption and cancer – highlighting that unlike tobacco, individuals may not be fully aware of the link between sugar and cancer. Because of these ceiling effects, a Chi-square test was conducted to compare the number of participants reporting that SSBs can cause cancer before and after watching online messages. Participants reported a significant increase in knowledge about the association of SSBs and cancer (from 0.49 to 0.61) after viewing messages, $\chi^2(1, N = 431) = 190.53, p < 0.001$.

Conclusion: More participants reported an association between SSB consumption and cancer after watching messages, even though cancer was never explicitly mentioned. This points to a “negative halo effect” that might have caused an association between SSB consumption and cancer among participants. Targeting SSB consumption behaviors through messages that are culturally relevant to Latinos may help to improve understanding of the health harms associated with SSB consumption among this high-risk group, particularly cancer.

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D225

10:30 AM-11:30 AM

PSYCHOMETRIC EVALUATION OF THE PERSONAL FEELINGS
QUESTIONNAIRE-2 (PFQ-2) SHAME SUBSCALE AMONG FEMALE
SEX WORKERS IN MEXICO

Cristina Espinosa da Silva, MPH¹, Heather Pines, PhD, MPH¹, Thomas Patterson, PhD¹, Shirley Semple, PhD¹, Alicia Harvey-Vera, PhD, MPH², Steffanie Strathdee, PhD¹, Gustavo Martinez, MD³, Eileen Pitpitan, PhD⁴, Laramie R. Smith, PhD¹

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Background: The Personal Feelings Questionnaire-2 (PFQ-2) was developed as a measure of shame among college students but has not been validated within stigmatized populations for whom shame may increase risk for HIV and other sexually transmitted infections. We examined the psychometric properties of the Spanish-translated 10-item PFQ-2 shame subscale in a sample of female sex workers (FSWs) in two U.S.-Mexico border cities.

Methods: From 2016-2017, 602 HIV-negative FSWs were recruited through time-location sampling in Tijuana (n=302) and Ciudad Juarez (n=300) to participate in an efficacy trial evaluating a 24-month theory-based text messaging behavior change maintenance intervention. Interviewer-administered surveys collected information on shame (10-item PFQ-2 subscale with 5-point Likert-type responses), socio-demographics, and psychosocial factors. Exploratory factor analysis (EFA), item performance, internal consistency, differential item functioning (DIF) by city, and convergent validity were assessed for the shame subscale.

Results: One misfit item was removed during EFA due to a low factor loading (< 0.30). The option characteristic curves for the 5-point responses indicated that item performance could be improved by collapsing to 3-point responses. EFA on the remaining 9-item subscale with 3-point responses supported a single construct underlying shame in this sample and indicated good internal consistency (McDonald's Hierarchical Omega=0.69; Total Omega=0.88). Mean shame scores were 6.9 (SD=4.2) and 4.4 (SD=3.3) in Tijuana and Ciudad Juarez (range= 0-27), respectively. Analysis of DIF indicated that FSWs in Tijuana and Ciudad Juarez differed systematically in their responses to four items, although the opposing directions of the item-level differences resulted in a negligible effect on overall scores. Correlations between the 9-item shame subscale and the PFQ-2 guilt subscale ($r = 0.79, p < 0.01$), Beck Depression Inventory ($r = 0.69, p < 0.01$), and Pearlin Emotional Support scale ($r = -0.28, p < 0.01$) were in the expected directions and demonstrated convergent validity.

Conclusions: The Spanish-translated 9-item PFQ-2 shame subscale showed good reliability and convergent validity in a sample of FSWs in Mexico, suggesting that it may be a useful measure of shame among FSWs and should be explored in other stigmatized populations. The significant DIF detected by city indicates that future analyses using the 9-item shame subscale should consider potential regional differential functioning.

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D226

10:30 AM-11:30 AM

PERCEIVED DISCRIMINATION MEDIATES THE IMPACT OF COM-
BINED VULNERABILITY ON PHYSICAL COMORBIDITY AND LIFE
SATISFACTION

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Although discrimination contributes to racial health disparities and is associated with worse physical health and mental well-being, few studies consider how race intersects with other vulnerable statuses to impact discrimination and health outcomes. We examined the mediating role of perceived discrimination in explaining the impact of combined vulnerability statuses on physical illness comorbidity and life satisfaction using baseline data from 517 older adult Veterans (48% white, 52% African American) participating in a randomized control trial of a behavioral intervention for osteoarthritis pain.

Measures included the Everyday Discrimination Scale, Charlson (Physical) Comorbidity Index (PCI), and the Satisfaction With Life Scale (SWLS). Demographic variables examined as potential vulnerabilities included self-reported African American race, female gender, annual income < \$25K, high school education or less, unemployment due to disability, and body mass index (BMI) based on medical records. Linear regression analyses and Sobel tests were used to test direct and indirect effects of combined vulnerabilities on PCI and SWLS.

Of the potential vulnerability statuses examined, discrimination was significantly associated with African American race ($B = .23, p < .001$), income less than \$25K ($B = .21, p = .001$), and disability ($B = .24, p < .001$), as well as the interaction between African American race and female gender. We thus created a vulnerability index comprising race, gender, disability and income. Approximately a third of participants had 0 (27%), 1 (33%) or 2 (27%) vulnerabilities; those with 3 or 4 were combined for analyses (13%).

In regression models controlling for age, BMI and site, a greater number of vulnerabilities was associated with more discrimination ($B = .13, p < .001$). Greater vulnerability had a significant total effect on higher PCI ($B = .15, p = .02$) and lower SWLS ($B = -1.27, p < .001$). More discrimination mediated the impact of greater vulnerability on higher PCI ($Z = 2.37, p = .02$) and lower SWLS ($Z = -.27, p < .001$). When discrimination was accounted for, the direct effect of greater vulnerability on higher PCI was not significant ($B = .11, p = .06$), whereas it remained significant for lower SWLS ($B = -1.00, p < .001$). Discrimination explained 22.0% and 21.6% of variance in the PCI and SWLS, respectively.

Perceived discrimination mediates the impact of having a greater number of vulnerabilities on higher physical comorbidity and lower life satisfaction. Discrimination and its psychosocial sequelae are important targets for reducing health disparities.

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AVOIDANCE OF CARE IN LATINX MIGRANT FARM WORKERS

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More than two decades of research have persistently demonstrated disparities in access to healthcare among Latinx populations (Alcalá, H.E. et al., 2016). This may be particularly true of immigrant Latinxs who work in high-risk, low-wage occupations, including in migrant farmwork. Latinx migrant farmworkers have similarly experienced drastic disparities in care access with a variety of proposed mechanisms, including low wages, lack of insurance, documentation status and geographical location/mobility (Vargas Bustamante, A., et al., 2012). The current study sought to identify stressors that predict avoidance of care in migrant farm workers. Participants were 236 Latinx migrant farm workers in the rural Midwest who completed an interview focusing on stress, health, and working conditions. The interview included items on healthcare utilization (having a routine place to seek care in the past year and avoidance of care due to cost), insurance status, poverty, fears related to documentation status, discrimination, mental health and demographics. Logistic regression models examined predictors of avoiding care due to cost and having a routine place to access care. Discrimination ($\alpha=.16$, $aOR=1.05$, $p=.044$) and legal status fears ($\alpha=.23$, $aOR=1.19$, $p=.004$), but not insurance status, US nativity, or language ($ps>.05$) were associated with avoidance of healthcare services due to cost. Only insurance status ($\alpha=.40$, $aOR=6.80$, $p<.001$) was significantly associated with having a routine place to seek care. Overall, results suggest different patterns for predictors of avoidance of care due to cost when compared with having a routine place to seek care. Specifically, factors such as discrimination and legal status fears were associated with greater odds of avoiding care due to cost, while the direct cost-related variables (e.g., insurance, poverty) were not. Results for having a routine place for care suggested an opposite pattern, with only insurance status as a significant predictor.

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10:30 AM–11:30 AM

COMMUNITY-BASED HEALTH NEEDS ASSESSMENT OF AN INDIGENOUS COMMUNITY IN GUATEMALA

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Health disparities exist in rural vs urban areas in low-middle income countries. In Guatemala, health disparities are even more complex given the large underserved and geographically isolated indigenous populations.

Objective: To conduct a community-based health needs assessment in an indigenous rural community in Lake Atitlán, Guatemala.

Methods: Working with a Community Advisory Group that consisted of key local stakeholders, we designed and coordinated the development of a four day needs assessment, which included a health survey and dental screening. The health survey collected information about health care access, cancer prevention, lifestyle, and sociodemographic information. In addition, we partnered with a dental team to provide universal dental screenings and access to fluoride.

Results: 247 adults completed the health survey in their preferred language (Spanish or Kaqchikel). Most participants were female (94.30%) and Mayan (95.80%) and the mean age was 43.04 ($SD=18.46$). Most participants reported no access to health insurance (97.50%) and a primary care physician (84.20%). Cancer screening rates were nearly nonexistent for lung (97.7%), colon (96.35%), prostate (85.71%), breast (93.53%), and cervical (83.19%). Most participants reported being physically active (61.70%), nonsmokers (98%), and never consuming alcohol (80.20%). All participants agreed to be contacted for future studies. The dental team provided 360 adult and 937 child oral health screenings, 800 children received fluoride treatment, and 1500 toothbrushes were distributed. They identified around 3016 dental procedures are needed, including filling and extractions.

Conclusions: Lack of healthcare access for this population is outstandingly high. However, protective behaviors are prevalent and may influence the overall health status of the population. We found a large need in oral health and cancer prevention screening. Future studies should focus on building sustainable infrastructures to implement cancer and oral surveillance, prevention, and treatment. Interest in participating in future research studies was high, suggesting the feasibility of continuous community-based research in the region.

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10:30 AM-11:30 AM

UNDERSTANDING THE COPING MECHANISMS OF LATINO PATIENTS WITH ADVANCED CANCER

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Background: Latinos are the largest minority group in the U.S., estimated at 59.8 million individuals, a number which is expected to double over the next four decades. Coping with advanced cancer can be challenging and overwhelming, particularly for underserved populations, such as the Latino population in the U.S. However, few studies have focused on the coping mechanisms used by Latinos to cope with cancer.

Objective: This study explores the coping mechanisms Latino patients utilize to cope with their advanced cancer diagnoses.

Methods: Twenty-four semi-structured interviews were conducted with Latino patients with advanced cancer diagnoses, who were recruited from cancer clinics in 1) New York City and 2) Ponce, Puerto Rico. Transcriptions of the interviews were analyzed using open coding thematic analysis, and the main coping trends were categorized utilizing Folkman and Lazarus' Transactional Model of Stress and Coping and Park and Folkman's Meaning-Making Model. Coping mechanisms were classified in accordance with the constructs of these models: 1) Meaning-Based Coping, 2) Emotion-Focused Coping, and 3) Problem-Focused Coping.

Results: In total, 28 coping mechanisms were identified across transcripts. 14 were identified as instances of Meaning-Based Coping (e.g. 'creating purpose', 'choosing attitude', 'optimism/hope'). 10 emerging themes were associated with Emotion-Focused Coping (e.g. 'focusing', 'tranquility', 'relaxation', 'escape/avoidance', 'normalizing', 'acceptance', 'family support', 'keeping occupied', 'engaging in crafts, hobbies and handmade projects' and 'help from others'). 5 were identified as potential factors of Problem-Focused Coping (e.g. 'desire to live/survival', 'educating yourself', 'learn', 'preparing', and 'fighting spirit').

Conclusions: The Transactional Model of Stress and Coping and the Meaning-Making Model as frameworks provide insight on the coping mechanisms used by Latino patients with advanced cancer. The data provides evidence that Latino patients may use meaning-based coping more frequently than emotion-focused and problem-focused coping. Future studies should explore the benefits of incorporating meaning-based coping during psychotherapy to better meet the needs of Latino cancer patients.

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10:30 AM-11:30 AM

EFFECTS OF DRAMA TRAINING ON SOCIO-PSYCHO-BEHAVIORAL WELL-BEING OF DISABLED: A PILOT STUDY

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Introduction: Due to physical or cognitive barriers, people with disabilities (PWD) often feel inferior. Such experience not only affects their interpersonal relationships, but also makes them difficult to integrate into society. Drama training can provide an interactive platform for people to learn how to deal with difficulties through mutual communication so as to enhance self-confidence and self-esteem. A drama training programme was provided to facilitate the psychosocial development among PWD. This study aimed to examine the effectiveness of the programme in improving self-esteem, coping strategies and personal well-being of PWD.

Research Design: The mixed-method study recruited 29 PWD from two rehabilitation centres in Hong Kong. Participants were assigned to intervention (n=15) and control group (n=14) after matching on demographics (e.g., IQ level, age, gender and types of disabilities). The intervention group received drama training on a weekly basis, 3 hours per session, for 1.5 years. Participants' coping strategies, self-esteem and personal well-being were assessed before and after the intervention. Repeated-measures ANOVA were conducted to examine the changes of the outcome variables. Individual interviews were also held with each PWD from the intervention group and drama director; while 2 separate focus group interviews were conducted to mentors of the drama training and caseworkers of the rehabilitation centres respectively. Thematic analysis was performed to analyse the interview data.

Results: After the drama training programme, the intervention group displayed a significant decrease in the coping strategies of "self-blame", $F_{(1, 27)} = 4.88$, $p < .05$, partial $\eta^2 = .15$; and a marginal significant decrease in "denial", $F_{(1, 27)} = 3.95$, $p = .06$. Their sense of future security and self-esteem were improved by 51.85% and 5.46% respectively although statistical significance was not reached. The interview findings also reflected that participants' self-confidence, problem-solving skills, emotional well-being, social skills and expressivity were improved.

Conclusions: Despite the small sample size, the findings suggest beneficial effects of the drama training program in improving the self-esteem, coping strategies and personal well-being of the PWD. Through re-enacting the difficult moments in daily life, the participants were able to develop adaptive coping behaviors, thereby enhancing their confidence and psychosocial well-being.

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D231

10:30 AM–11:30 AM

FOSTERING HEALTH AND WELLBEING AMONG LOW-WAGE FOOD SERVICE WORKERS: USING FORMATIVE RESEARCH TO GUIDE INTERVENTION DESIGN

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Background: Low-wage workers are often employed in high-risk jobs characterized by challenging physical demands, job insecurity, repetitive work, and low job decision latitude. These low-wage jobs are especially common in food service, which employs 9.5 million workers in the US. This paper describes the formative research conducted to develop an intervention designed to improve musculoskeletal disorders, worker wellbeing, employee engagement, and turnover intentions among low-wage food service workers. Improving working conditions for these workers can help to build a culture of health and safety and create an environment where workers can thrive.

Methods: Investigators at the Harvard Center for Work, Health & Wellbeing conducted formative research, including non-participant observations in food service sites; 9 semi-structured interviews with district and general managers; and focus groups with front-line workers in 5 cafeterias in Greater Boston using an interview/focus group guide. The guide focused on working conditions that impact worker health and wellbeing and how these conditions could be improved. We used standard analytic methods for analysis of qualitative data collected in the form of texts, including transcripts of the audio-taped interviews using NVivo software. Analyses were guided by a conceptual framework to inform intervention development.

Results: We identified 3 working conditions to target: safety and ergonomics; work intensity; and job enrichment. We also identified essential elements that would enhance intervention implementation: communication infrastructure between managers and workers; leadership commitment, and employee participation in planning and implementing the intervention. We designed a 13-month intervention, addressing each working condition as a module that was delivered sequentially in 5 cafeterias. The intervention operated at two levels: Employee/general manager teams—who identified and brainstormed solutions to address the root causes of working conditions at their site and develop action plans; Coordinating Committee—to engage management and worksite stakeholders in regular communication about the intervention.

Conclusions: The formative research provided a means of engaging workers and managers in identifying working conditions of importance to them in their day-to-day experiences on their jobs. Demonstrating the feasibility and benefits of modified working conditions may contribute to future uptake of these initiatives.

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D232

10:30 AM–11:30 AM

ATTITUDES, BELIEFS, KNOWLEDGE, AND SELF-CARE BEHAVIORS OF AFRICAN AMERICANS: THE DETROIT YOUNG ADULT ASTHMA PROJECT (DYAAP)

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Background: Urban African American Emerging Adults (AAEA) suffer disparities in asthma prevalence, morbidity, and mortality compared to Whites, often the result of inadequate asthma management. Contributing factors may be disease-related knowledge, self-care behaviors and beliefs, and experiences in healthcare. Little is known about these factors in AAEA, and understanding them is an essential first step in helping this vulnerable group.

Methods: AAAs (n=85) ages 18–29 with moderate to severe persistent asthma and low controller medication adherence who were part of a clinical trial of an intervention to improve medication adherence. We report on baseline measures obtained before treatment entry including self-care practices and beliefs about asthma, healthcare, and controller medication. Asthma control was assessed with the Asthma Control Test and spirometry.

Results: Most (78%) were female [mean age=23.1 (SD=3.4)]; had at least some college (60%); and employed (57%). Most (57%) were diagnosed by age five. The majority (75%) had poorly controlled asthma and 24% had a lung capacity of less than 70%.

Most have family (87%) or friends (56%) with asthma. Only 8% had taken an asthma course. General asthma knowledge was poor [M=8.2 (SD=1.6)]. While 68% believed that asthma is permanent, 44% thought it can be cured. Asthma information was sought from doctors (84%), specialists (67%) and search engines (50%). Recognizing early signs of asthma episodes were taught by a health professional (66%), family member (46%), or self-taught (44%), but inhaler use education primarily from a physician (39%). Only 26% use a peak flow meter. Breathing techniques (68%) and vitamins (22%) were the most popular alternative treatments.

Despite 73% reporting they were confident that they can take medication as prescribed, 24% forgot to use it in the past 4 weeks, and 50% were careless about using it. Half (56%) worried about its long-term effects; 54% indicated that their lives would be impossible without medications.

Conclusion: Results enhance our understanding of asthma knowledge, beliefs and self-care of AAAs with persistent asthma. Despite the disparate risk faced by this group, few studies have included them and/or explored their experiences with asthma and healthcare. We found that many have limited knowledge, incorrect beliefs about asthma and seek information from potentially unreliable resources. Interventions focused on asthma control should address these gaps.

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D233

10:30 AM-11:30 AM

RESPONSIVENESS TO MOTIVATIONAL INTERVIEWING AMONG LATINA OVARIAN CANCER SURVIVORS PARTICIPATING IN THE LIVES STUDY

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Background: In the United States, cancer is the leading cause of death among Latinas. It is estimated one in four cancer case could be prevented with modifiable lifestyle behaviors. However, approaches for changing these behaviors may be different based on cultural factors. Motivational interviewing (MI) is an evidenced-based approach for changing lifestyle behaviors and is composed of 5 constructs, which are evocation, collaboration, autonomy, direction and empathy. However, previous research, as well as our own anecdotal observations, has found that Latinas may be less responsive to usual behavior change techniques.

Objective: Determine the difference in MI scores between non-Hispanic white women and Latinas who have completed treatment for ovarian cancer participating in a large, well-powered RCT (GOG-0225).

Methods: Women randomized to the intervention arm received lifestyle counseling from MI trained health coaches. Counseling sessions were randomly selected from a subsample of ten Spanish-speaking Latinas, 21 English-speaking Latinas, and ten age-matched non-Hispanic white women during the first six months of intervention. Counseling sessions were scored using MITI 3.0 (5-25, higher score indicating better MI fidelity). Language preference (English or Spanish) was used as a proxy for acculturation. Differences in total MITI scores between groups were evaluated using ANOVA, while individual constructs were evaluated using the Kruskal-Wallis test.

Results: Mean MITI scores were 17.6 (SD ± 8.4), 20.9 (SD ± 1.2) and 21.0 (SD ± 0.67) for Spanish-speaking Latinas, English-speaking Latinas and non-Hispanic white women, respectively. Spanish-speaking Latinas' MITI scores were significantly lower ($p < 0.001$), with a β -coefficient value of -3.4 (95%CI: -4.3, -2.5) than non-Hispanic white women, while English-speaking Latina MITI scores were not significantly different than non-Hispanic white women. Direction, evocation, and collaboration were significantly different between groups ($p < 0.001$).

Conclusion: Significant differences between MITI scores were observed in Latina cancer survivors based on language preference. Efforts to tailor behavioral interventions for race and culture are needed, potentially with special attention to direction, evocation and collaboration.

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D234

10:30 AM-11:30 AM

EXAMINING RURAL/URBAN DIFFERENCES IN PROVIDER PERCEPTIONS OF HPV VACCINATION IN ADOLESCENT BOYS AND GIRLS

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Purpose: HPV vaccination uptake is consistently lower in rural areas as compared to urban/suburban areas. It is important to assess if there are similar or different barriers and facilitators of vaccine uptake in these populations, in order to design effective interventions that target the specific needs of local populations.

Methods: We surveyed 94 clinic vaccine coordinators from 64 of Indiana's 92 counties. The survey included open-ended questions regarding barriers they face to vaccinating girls and boys in their communities as well as areas for improvement. Participants were excluded if they did not indicate a geographic location ($n=4$). Data were analyzed using thematic analysis and responses for participants were compared by the clinic geographic location: rural ($n=45$) and urban/suburban ($n=45$).

Results: All respondents were female, 82% were non-Hispanic White, and 58% reported being registered nurses. The most commonly reported barriers for vaccinating both boys and girls were a lack of education and misinformation on the internet. While 60% of stakeholders indicated the barriers for boys and girls were the same, there were geographic differences with 75% of rural stakeholders reporting little or no differences in barriers between sexes and 51% of urban/suburban stakeholders saying there were differences. One barrier that was different in vaccinating boys and girls was that parents (and some providers) were still unaware the vaccine is recommended for boys. Furthermore, 60% of respondents mentioned that a major barrier to vaccinating girls was either a concern about increased sexual activity or a belief that it was unnecessary because the patient was not currently sexually active; this belief was not mentioned frequently for boys and did not differ between geographic locations. Regardless of geographic location, the most commonly reported way to improve HPV vaccination was increasing education, followed by improving provider recommendation, and making it mandatory for school entry.

Conclusions: The reported barriers to HPV vaccination and ways to improve vaccination rates were similar between rural and urban/suburban stakeholders. The urban/suburban locations reported gender differences in barriers more frequently than rural providers. This may indicate that there needs to be different approaches to educating vaccination providers on making high quality HPV vaccine recommendations depending on whether the provider works in a rural or urban/suburban area.

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D235

10:30 AM-11:30 AM

UNDERSTANDING THE RELATIONSHIP BETWEEN HEALTH LITERACY AND QUALITY OF LIFE OF LATINO CANCER PATIENTS

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Background: Health literacy (HL)—the ability to understand health information—is a critical component in treatment decision-making of Latinos with advanced cancer (AC), which influences their quality of life (QOL). However, little is known about the association between HL and QOL among Latinos with AC. With 41% of Latino adults lacking basic HL and Latinos more likely to be diagnosed with AC, HL is an essential target of intervention for improving QOL. The purpose of this study is to examine the extent HL is associated with QOL among Latino patients with AC and to explore its correlation to language preference.

Methods: A cross-sectional survey study was conducted with 82 Latinos diagnosed with advanced stage and solid tumor cancers between 2015 and 2019. Participants were recruited from a major cancer center ($n=48$), and two cancer clinics, one located in New York City ($n=22$) and the other in Ponce, Puerto Rico ($n=12$). Participants were asked what language they felt most comfortable speaking. QOL and HL were measured with the Functional Assessment of Cancer Therapy-General (FACT-G) and the Single Item Literacy Screener (SILS), respectively. One-way analysis of variance (ANOVA) and independent-samples t-test were conducted to analyze the data.

Results: Fifteen percent reported English, and 85% reported Spanish as their preferred languages. Spanish-speaking Latinos diagnosed with AC reported significantly lower functional QOL compared to English-speaking Latinos [$t(76)=-2.53$, $p=.01$]. Participants with lower HL reported lower QOL [$F(73)=2.69$, $p=.05$], functional [$F(73)=3.72$, $p=.012$], and social/family [$F(73)=3.99$, $p=.01$] well-being than those with higher HL. Birthplace was not associated with QOL.

Conclusions: QOL is independently associated with language and HL among Latino cancer patients. Spanish-speaking Latinos with AC are at a higher risk of poorer QOL outcomes. Given the lower functional QOL of Spanish speakers and lower overall QOL of Latinos with low HL, it is essential to address linguistic and literacy needs of Latinos with AC to improve their cancer experience and the ability for self-management and care. Future research is also necessary to understand the different domains of QOL and its influence on HL.

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10:30 AM-11:30 AM

THE ASSOCIATION BETWEEN LGBTQ+ COMMUNITY INVOLVEMENT AND HIV TRANSMISSION RISK BEHAVIORS AMONG SEXUAL MINORITY MEN

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Background: Sexual minority men remain disproportionately burdened by HIV despite recent prevention efforts. Although involvement in the LGBTQ+ community has been found to be a protective factor against many adverse health outcomes, research examining the association between community involvement and HIV transmission risk behaviors has yielded conflicting results. This study aims to examine whether the importance one places on various aspects of community involvement is associated with HIV transmission risk behaviors.

Method: This study was conducted using baseline data from an ongoing eating disorder prevention randomized controlled trial, which includes 139 gay and bisexual men aged 18-35 living in San Diego, California. Community involvement was measured using the Importance of Gay/Bisexual Community Activities (IBGCA) scale, which was distilled into two factors: “community activism” and “partying” that emerged through exploratory factor analysis. We performed a zero-inflated poisson regression to examine the association between community activism, partying, and their interaction term, with HIV transmission risk behaviors, which was operationally defined as engaging in condomless anal sex while not taking PrEP. We also added number of sexual partners and frequency of community involvement as control variables in the model.

Results: A significant interaction term emerged ($b = -.267$, $SE = .133$, $z = -2.24$, $p = .025$). This interaction term was subsequently probed via simple slope analyses set at ± 1 SD of the importance of community activism. Results indicated that at low levels of community activism, partying was significantly positively associated with HIV transmission risk behaviors ($b = .555$, $SE = .135$, $t = 4.11$, $p < .001$), whereas at high levels of community activism, the association between partying on HIV risk was no longer significant ($b = .127$, $SE = .176$, $t = .721$, $p = .472$).

Conclusion: This study shows that the importance sexual minority men place on various aspects of community involvement is associated with HIV sexual risk behaviors, which has important public health implications. While valuing LGBTQ+ community activities that often involve alcohol/substance use and hook ups is associated with increased HIV transmission risk behavior, simultaneously finding meaning in LGBTQ+ community activism could help protect against this association. Therefore, encouraging community activism could be a target for intervention.

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D237

10:30 AM-11:30 AM

UNDERSTANDING ADVANCED PLANNING PRACTICES IN A SAMPLE OF OLDER ADULTS LIVING WITH HIV/AIDS IN NEWARK, NEW JERSEY

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Background: By 2025, people aged 50 and older will constitute the majority of those living with HIV/AIDS (PLWHA) in the US. This aging population of PLWHA face different physical, mental, and psychosocial health challenges related to living with HIV/AIDS, the general aging process, and the long-term impact of being on antiretroviral treatment (ART). Many who were diagnosed prior to the implementation ART in 1995 were effectively given a death sentence due to the short life expectancy of living with untreated HIV/AIDS. As such, individuals who did not expect to reach older adulthood now face the realities and obstacles around advanced care planning (e.g. life insurance/retirement funds, advanced directives/living wills, power of attorney, etc.) when living well past their diagnoses was something they expected to do. This qualitative interview sought to understand the experiences of older PLWHA in one of the 57 geographic areas that has been prioritized by the federal 'Ending the HIV Epidemic' plan.

Methods: Recruitment efforts occurred from March – June 2019 in the greater Newark, New Jersey metropolitan area. We conducted 40 qualitative interviews with older (50+) adults living with HIV/AIDS. Upon providing written consent, each interview lasted 45–90 minutes following a semi-structured interview guide. Three trained research assistants conducted the interviews. They were transcribed by research interns and independently verified by members of the research staff.

Results: The ranges of the participants' age were 51–69 years old (18 women and 22 men). 47 participants identified as Black non-Hispanic, with the remaining 3 identifying as White non-Hispanic or 'Other.' One of the main themes that emerged from the preliminary data analysis is a fear of not being financially stable to enter later adulthood (65+) with regard to life insurance policies, retirement funds, or medical savings accounts. Additionally, while some participants indicated they have close family members or friends to rely on for various types of assistance (housing, day-to-day, end-of-life, etc.) if their health declines, several indicated that they have not thought about advanced care planning because they are just trying to survive and live day-to-day.

Conclusions: As the population of PLWHA continues to age, it is imperative that healthcare professionals across disciplines incorporate advanced care planning into conversations during routine medical and social support visits so that they feel more equipped and better prepared to reach that point.

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D238

10:30 AM-11:30 AM

TO TAILOR OR NOT TO TAILOR: THAT IS THE QUESTION WHEN CONSIDERING E-HEALTH READINESS AMONG PEOPLE LIVING WITH HIV

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Background: The Technology Readiness Index 2.0 (TRI 2.0) may provide guidance in understanding people's willingness to adopt future technologies. Yet the measurement structure of the TRI 2.0 has not been confirmed among people living with HIV and prior work suggests for people living with HIV, disease-specific considerations are linked to willingness to uptake ehealth approaches. The study purpose was to: 1) assess the fit of the TRI 2.0 for people living with HIV, using confirmatory factor analysis; 2) assess the fit of an adapted version of the TRI 2.0 (referred to in text as the TRI-HIV) using confirmatory factor analysis; and 3) compare the fit of the TRI 2.0 with the TRI-HIV.

Methods: N=408 people living with HIV residing in the state of Florida and engaged in Ryan White case management completed a telephone-based survey regarding technology use and willingness to use technology among people living with HIV. Technology readiness was measured with: 1) the TRI 2.0, as well as 2) an adapted version of the TRI 2.0 (henceforth TRI-HIV), which included some TRI 2.0 items as well as new items, similar to the TRI 2.0, that were tailored specifically to using technology for HIV-related ehealth. These items were created by adding something HIV-specific to the general TRI 2.0 items; changes were informed by findings from open-ended interviews conducted to inform survey development. For example, while the TRI 2.0 item said "If you provide information to a machine or over the Internet, you can never be sure if it really gets to the right place," the TRI-HIV item was "If you provide information about your HIV status over a computer or Internet, you can never be sure who will find out." Fit of the existing measurement structure was tested with confirmatory factor analysis for two models: 1) TRI 2.0 and 2) the TRI-HIV.

Results: When the original TRI 2.0 instrument was applied to our sample of people living with HIV, the data fit the existing measurement structure of the TRI 2.0 (CFI=0.967; TLI=0.960; RMSEA=0.035 [0.022-0.046]). Tailoring items specifically for people living with HIV did not improve model fit (CFI=0.953; TLI=0.943; RMSEA=0.038 [0.026-0.049]).

Conclusions: The TRI 2.0 measurement structure fit well with our population of people living with HIV. Tailoring questions specifically for our population did not significantly increase model fit, suggesting that tailoring TRI 2.0 items for HIV-specific ehealth concerns may unnecessary. Alternatively, it may be worth conducting exploratory factor analysis (EFA) on the TRI-HIV to determine if another factor structure would better fit. Future research should apply EFA to the TRI-HIV and also investigate how the TRI-HIV and the TRI 2.0 as well as factors outside of technology readiness constructs (optimism; discomfort; innovation; insecurity) that may affect willingness to take part in HIV-related ehealth interventions.

AQ1

D239

10:30 AM–11:30 AM

UNDERSTANDING BARRIERS AND FACILITATORS TO PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV SERVICES IN WESTERN INDIA

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Introduction: Most of the 0.14 million HIV-positive children living in India contracted the human immunodeficiency (HIV) virus from their mother while in the womb, during labor, or through breastfeeding. Mothers can significantly reduce the risk of HIV transmission by initiating and adhering to the prevention of mother-to-child transmission of HIV (PMTCT) services, but only 60% of pregnant women living with HIV in India used these services in 2017. Given the scarce literature on PMTCT utilization in India, the present qualitative study used the Social Ecological Model (SEM) to identify barriers and facilitators to seeking PMTCT services that mothers face in western India.

Methods: Through purposive sampling, 15 fathers and 16 mothers (age range 20 to 45 years; 51% had less than a 7th standard education; 75% had a baby delivered at a public hospital) were recruited to participate in semi-structured in-depth interviews assessing barriers and facilitators to PMTCT services. Interviews were audio recorded and transcribed verbatim. Direct content analysis was used to identify *a priori* and emerging themes based on the SEM. One author independently coded 31 interviews and then discussed coding with two more authors. Participants also completed a demographic survey, and these data were summarized using descriptive statistics.

Results: At the individual level, barriers to PMTCT services were lack of money for transportation, poor physical health, and feeling distressed/anxious, whereas facilitators were the hope they felt for the new baby and experiencing unusual health symptoms that caused them to seek medical services. At the interpersonal level, barriers to PMTCT services were poor peer/family and partner support, whereas facilitators were positive partner support, peer/family support, and positive doctor/staff support. At the institutional level, availability of multiple services in one location, affordability of PMTCT services, and good quality of care were facilitators to PMTCT services, whereas obtaining prenatal care in the private sector was a barrier. At the community level, outreach workers facilitated PMTCT utilization, whereas HIV stigma was a salient barrier.

Conclusions: The present study was the first to examine barriers and facilitators to obtaining PMTCT services in western India, and it adds to our understanding of facilitators and barriers to PMTCT services. This study has important implication for health care institutions, as it recognized that health care providers have a significant role in facilitating PMTCT services. Findings from the present study can be used to enhance and develop locally relevant community-based strategies/interventions for improving PMTCT utilization in India. Future research should develop and test interventions to help India achieve optimal adherence to guidelines for the PMTCT of HIV.

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D240

10:30 AM–11:30 AM

THE INTERACTIVE EFFECTS OF DEPRESSION AND SUBSTANCE USE AMONG OLDER ADULTS LIVING WITH HIV

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Background: HIV-positive individuals are living longer, healthier lives, but neurocognitive impairment (NCI) remains a prevalent health burden among older adults living with HIV (OALWH). At present, the precipitating and perpetuating factors of HIV-associated NCI in OALWH are largely unknown, although accumulating evidence indicates that overlapping psychosocial issues may play a primary role in cognitive health outcomes. The current study aimed to explore the association between depression, substance use, and NCI in OALWH.

Method: A sample of New York City-based OALWH (N=99) with chronic and current substance use issues completed a series of neurocognitive assessments and self-report surveys. The majority of the sample was Black (74.4%), male (66.7%), and reported post-secondary education (53%). On average, the sample was 54.6 years old ($SD = 4.0$) and had been living with HIV for 16.7 years ($SD = 7.0$). HIV disease characteristics, race, sex, and education were included as covariates in subsequent general linear models.

Results: Results indicated that approximately half (49%) of the overall sample demonstrated global NCI, and the majority exhibited mild impairment in the domains of verbal learning (60%), verbal memory (70%), and motor speed (67%). Nearly half (48.5%) of participants reported significant depressive symptoms. Multivariate analyses revealed a main effect of depression on NCI – specifically in the domains of executive function and motor speed. While there was no main effect of substance use, a significant interaction between depression and substance use emerged. Participants who reported depressive symptoms and either stimulant or marijuana use yielded lower global and cognitive domain-specific scores than participants who used these substances but were not depressed.

Conclusion: These results suggest that depression is directly associated with NCI and furthermore, that depression interacts with specific substances of abuse to exacerbate cognitive impairment in OALWH. Further research is needed to improve understanding of these associations to facilitate improved prevention and treatment strategies for HIV-associated NCI.

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D241

10:30 AM–11:30 AM

CULTURAL AND SYNDemic FACTORS INFLUENCE PREP WILLINGNESS, INTENTIONS, AND UPTAKE AMONG PARTNERED LATINX SEXUAL MINORITY MEN

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Background: While HIV incidence remained generally stable since 2011, rates increased by 13% among Latinx sexual minority men (LSMM). PrEP is highly efficacious at preventing HIV, yet uptake among eligible SMM has been slow, and slower among LSMM specifically. Many new HIV infections among SMM occur between main partners and guidance for dissemination specifically recommends PrEP for partnered men who have sex outside their relationships. The Motivational PrEP Cascade identifies significant declines of PrEP-eligible individuals across stages from willingness, intention, to uptake. Syndemic Theory has been utilized to explain disproportionate rates of HIV in marginalized communities; however, minimal work has examined the impact of syndemic conditions on the PrEP cascade. Among LSMM, cultural factors (machismo and caballerismo) might also influence motivations of PrEP uptake. Given that LSMM have higher rates of HIV infection and are less likely to use PrEP, it is critical to identify barriers to PrEP uptake among this high-priority community.

Methods: Data were gathered from a US-wide online study of 625 LSMM in a same-sex relationship. We focus here on the 368 LSMM reporting an HIV-negative status and PrEP eligible based on CDC guidelines. The mean age was 30 and mean relationship length was 45 months. Participants completed demographics, the Machismo for Latino Men scale, and measures of syndemics (depression, childhood sexual abuse, intimate partner violence, substance use) and PrEP willingness, intentions, and uptake.

Results: More than half (61%) of the men were PrEP-eligible, 53% reported willingness to start PrEP, 26% intended to start PrEP, and 21% are on PrEP. Over half (51%) reported experiencing 5 or more out of 10 syndemic conditions. Chi-square tests examined the influence of >5 syndemics on PrEP-eligibility, willingness, intention, and uptake. LSMM reporting 5 or more syndemics were more likely to be PrEP-eligible and to indicate greater intent to start PrEP. There was a significant association of machismo ($\exp(B)=1.02$ $p<.05$) and caballerismo ($\exp(B)=0.97$ $p<.01$) on PrEP eligibility. Similarly, caballerismo was negatively associated with the odds of intending to start PrEP ($\exp(B)=0.98$ $p<.05$) while machismo was not associated with PrEP intentions. There were no significant effects of cultural and syndemic factors on PrEP uptake.

Conclusions: Our findings highlight the role of cultural and syndemic factors on PrEP uptake among LSMM, influencing both PrEP eligibility and intentions, but not willingness. An integration of cultural ideals of masculinity (e.g., Machismo) may be particularly useful in addressing negative views of PrEP in LSMM. Future work to address protective cultural values in the face of adversity represents a beneficial route for reducing HIV among LSMM.

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10:30 AM–11:30 AM

PSYCHOSOCIAL PREDICTORS OF SELF-REPORTED HIV STATUS

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Background: HIV testing is a form of self-care and prevention as individuals who partake in regular testing are engaged in managing their health and preventing infection of partners. Differences in self-reported HIV status (negative versus unknown) indicate differences in HIV testing behavior. HIV testing uptake may be predicted by an individual's sexual-risk behavior, sociodemographic characteristics, and psychosocial factors. These factors may likewise predict HIV risk more broadly.

Methods: Data are from UNITE, a cohort study of SMM from across the United States ($N=7951$; $M_{age}=32.7$; $SD=11.4$) who reported negative or unknown HIV status at baseline. We conducted chi-square analyses to examine group difference on self-reported HIV status. We also conducted a binary logistic regression to examine the association between psychosocial factors and self-reported HIV status, adjusting for sociodemographic characteristics and sexual risk behavior. Sexual risk behavior was measured by self-reported number of male casual partners and condomless anal sex acts within the last 6 months.

Results: We found that 78.5% of the sample reported a negative status and 21.5% reported an unknown status. Significant differences by sociodemographic characteristics and psychosocial factors (e.g., "outness" sexual shame, sexual pride, perceived HIV risk) were identified. Our regression analysis indicated that sexual risk behavior did not predict self-reported status. Participants who were more "out" with regards to their sexual orientation ($AOR=.84$, $p=.00$) and reported more sexual pride ($AOR=.91$, $p=.01$) had significantly lower odds of reporting an unknown status. Participants with greater perceived HIV risk ($AOR=1.06$, $p=.00$) and more sexual shame ($AOR=1.21$, $p=.00$) had significantly higher odds of reporting an unknown status.

Conclusion: Our model demonstrated that all 4 psychosocial factors correlate with self-reported HIV status when controlling for sociodemographic characteristics and sexual risk behavior. Those who are less out, feel less sexual pride, and more sexual shame are less likely to know their status, yet engage in similar sexual risk behavior as those who do. Surprisingly participants with unknown status reported higher perceived risk of HIV, which suggests that perceived risk rather than actual risk is more predictive of lack of engagement in testing. Therefore, interventions to increase testing may benefit from emphasizing sex-positivity rather than risk.

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10:30 AM–11:30 AM

A SYSTEMATIC REVIEW OF QUANTITATIVE STIGMA MEASURES AMONG YOUNG SEXUAL MINORITY MEN

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Introduction: Young sexual minority men (YSMM) have the highest rates of new HIV infections in the U.S., with Black and Latino YSMM specifically being disproportionately affected in comparison to their White counterparts. Research suggests that one of the major drivers of the disparity is intersectional stigma. Intersectionality theory suggests that interlocking stigmatized identities (e.g. race, ethnicity, sexual orientation, gender expression) produce unique detrimental effects. The confluence of multiple identities in addition to sexual minority status and gender expression place Black and Latino YSMM at increased risk of suffering negative health outcomes. Given the lack of quantitative stigma measures developed through an intersectional framework, the focus of this study was to conduct a systematic review to identify currently available measures for multiple forms of stigma among YSMM.

Methods: PubMed and PsycInfo were used to identify peer-reviewed papers that contained a quantitative measure of stigma focused on at least one domain of interest (e.g., race/ethnicity, sexual orientation, or gender expression) with samples that included YSMM. A variety of search terms were used to ensure the search was comprehensive and a range of eligibility criteria were used to include studies in the systematic review. Scales were categorized by race/ethnicity, sexual orientation, and gender.

Results: Initial search results yielded 283 relevant articles of which 127 met inclusion criteria. Within these, 105 scales or items were identified that measured at least one form of stigma (e.g., intrapersonal, interpersonal, structural). As related to stigma, 20 measures focused on gender, 26 focused on race/ethnicity, and 34 focused on sexual orientation. Stigma measures related to multiple minority identities included 11 on race/ethnicity and sexual orientation, 8 on sexual orientation and gender, 3 on race/ethnicity and gender, and 3 on all three categories.

Conclusion: Measuring YSMM's experiences of stigma has been critical in advancing their psychosocial and physical well-being. However, of the measures identified, most focused on experiences of stigma directed at a singular identity (e.g., sexual orientation). While some attempted to address the effects of stigma on individuals with multiple stigmatized identities, very few were designed through an intersectionality framework. This speaks to the need for creating psychometrically-sound, empirically-validated instruments that take into consideration the intersecting identities YSMM may hold in order to address the unique effects of stigma these individuals experience.

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10:30 AM–11:30 AM

ASSESSING KNOWLEDGE, BEHAVIOR, AND SEXUAL DECISION-MAKING SKILLS AMONG YOUNG BLACK COLLEGE STUDENTS AT RISK FOR HIV

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Black (or African American) men and women between the ages of 18 and 29, including college students, in North Carolina bear a disproportionate burden of sexually transmitted diseases (STD) (NCDHHS, 2015). Urban areas in the Piedmont Triad Area of Greensboro, North Carolina have large populations of college students with elevated risk of infection for STD, including HIV. The Centers for Disease Control and Prevention (CDC) advises that sexual risk behaviors associated with these outcomes include: having more than one sexual partner, changing sexual partners frequently, and having oral, vaginal or anal sex without a condom (CDC, 2016). The current triangulated mixed methods study explored the STD knowledge, attitudes, and behaviors, and sexual risk of Black college students enrolled at Historically Black Colleges and Universities (HBCU) and Minority Serving Institutions (MSI) (MSI). The data collection tools included a 70-item online confidential survey, individual interviews (Women Only), and focus groups. Further, this project implemented *Healthy Love*, a single session, CDC evidence-based behavioral and biomedical intervention that was designed to increase safer sex or protective behaviors for STD and HIV among Black women. The implementation of this intervention with our sample that included Black men is the first to deliver this critical programming to this under-researched population.

The sample comprised 4 HBCU's and one MSI, all located in the South, which bears the greatest burden of HIV infection and transmission. Fifty one percent of the sample were women followed by 48% who identified as men and 1% who identified as other. Participants were given pre-and post-tests before the delivery of the intervention that measured STD knowledge, attitudes towards condom use, and sexual risk. The findings from the pre and post-test indicated that students' knowledge about sexually transmitted diseases increased (mean difference -2.89) and the endorsement of high-risk sexual behavior decreased (mean difference 4.66). The study participants endorsed high risk sexual behaviors including the use of an illicit substance at the time of intercourse, unprotected sexual encounters, and ambiguity as it relates to HIV testing and knowing their status. The overarching goal of this study was to test the efficacy of the *Healthy Love* prevention intervention when implemented in this population. The findings from this study indicate the need for culturally tailored and gender specific biomedical behavioral HIV prevention interventions that directly targets the unique sexual health needs of Black College Students.

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10:30 AM-11:30 AM

PREP PERCEPTIONS AMONG PROVIDERS AND ASSOCIATIONS WITH FORMAL TRANSGENDER HEALTH TRAINING

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Background: Access to pre-exposure prophylaxis (PrEP) continues to expand to high HIV risk populations, which includes transgender women. This expansion of services is reflected in the increasing number of healthcare providers who have sought out and/or received formal training for prescribing PrEP and monitoring patients currently prescribed PrEP. However, provider training may not adequately address specific treatment and other related concerns that arise in the context of providing PrEP to transgender women. Lack of transgender competent health care has been shown to contribute to medical mistrust, particularly among transgender women, who may delay or forgo healthcare as a result.

Methods: To evaluate perceptions related to transgender women's healthcare and PrEP, we surveyed 102 healthcare providers who self-identified as prescribers of PrEP. Differences in healthcare and PrEP related perceptions were then assessed by self-reported level of transgender-specific training (1. *have not received training*, 2. *have sought out formal training*, 3. *have received formal training*).

Results: Training status did not differ by age of provider or number of years in practice. However, significant differences in perceptions related to transgender healthcare and PrEP were noted. Specifically, those who had neither sought out or received training reported more agreement with concerns regarding PrEP adherence among transgender women ($F(2,99)=4.95$, $p=.009$); concerns about PrEP leading to drug resistance ($F(2,98)=7.04$, $p=.001$); and discomfort with discussing sexual activity with transgender patients ($F(2,98)=18.8$, $p<.001$).

Conclusion: These results indicate opportunities to enhance the scope and quality of training received by healthcare providers who may prescribe PrEP to transgender patients. Identifying both gaps in provider knowledge and existing concerns about how best to treat this population will help to ensure inclusive healthcare for trans women and more successful promotion of PrEP to patients.

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10:30 AM-11:30 AM

SOCIAL PSYCHOLOGICAL ANTECEDENTS TO RACIAL HOMOPHILY AMONG BLACK MEN WHO HAVE SEX WITH MEN

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Black men who have sex with men (MSM) continue to bear the burden of new HIV infections in the United States. The racial disparity in HIV infection among MSM has been attributed, in part, to high rates of racial homophily within the sexual networks of Black MSM. Within homophilous, closed-off networks, disease propagates easily, increasing the odds of HIV exposure per act of sexual risk behavior. The cause of homophily is unknown, but it is posited that objectification based in race-based sexual stereotypes (e.g., large penis size) by non-Black MSM leads to homophily among Black MSM. In the current vignette-style experimental study with Black MSM recruited from Grindr, we tested the Objectification-Homophily Hypothesis. Specifically, in a 2 (stereotype exposure: racialized versus non-racialized penis size stereotype) x 2 (potential partner race: Black or White) between-subjects design, the interactive effect of stereotype exposure and partner race on partner engagement via state self-objectification (SSO; feeling like a body versus a full self) was examined. Results showed that while stereotype exposure had no unique or interactive effects, White partner race reduced engagement through SSO, an indirect effect moderated by degree of past-year racial homophily, i.e., significant only among those who reported high past-year homophily.

In a second, follow-up study currently being conducted, a stronger contrast between levels of the stereotype exposure variable is used. Initial results are expected to replicate, but a 3-way interaction of stereotype exposure, potential partner race, as well as past-year racial homophily, is predicted instead-leading to decreased engagement via SSO. These projected results would indicate that exposure to race-based sexual stereotypes by non-Black MSM likely leads, in part, to the formation of racially homophilous sexual networks among Black MSM, because such stereotyping is experienced as objectifying. Of particular interest, however, would be the moderation of this indirect effect by past-year homophily. Indeed, results would indicate that such a mechanism is relevant only for those who demonstrate high levels of racially homophilous partnering already. As such, rather than acting as a fundamental cause, it may be that race-based sexual stereotyping and objectification serve to *maintain* racially homophilous sexual networks among Black MSM. Network-level HIV prevention interventions will need to consider the impact of such individual-level psychological processes that perpetuate increased risk for HIV infection among Black MSM.

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10:30 AM-11:30 AM

SEXUAL IDENTITY, RELATIONSHIP PATTERNS, AND HIV RISK BEHAVIORS AMONG CISGENDER MEN WHO PARTNER WITH TRANSGENDER WOMEN

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Background: Cisgender men who partner with transgender women (TW) are often portrayed as an elusive, highly stigmatized population. While these men are pivotal to the dynamics of transmission risk that drive HIV disparities among TW, little is known about their sexual identities, relationship patterns, and sexual health self-management strategies. We present descriptive findings from a first-of-its-kind dataset comprising cis men who describe their main partners as TW.

Methods: Data were taken from a large national online survey recruiting individuals from geo-targeted sexual networking apps from November 2017 to August 2019. Cis men (n=541) were selected and categorized based on sexual orientation identity as gay, queer, heterosexual, and bisexual. Differences in relationship patterns and HIV risk behaviors were examined.

Results: A majority of cis men identified as bisexual (60%), followed by gay (19%), heterosexual (13%), and queer (10%). Heterosexuals were more likely to be in a relationship with TW 3 months or less and gay men were more likely to be in the relationship 1 year or more ($X^2 = 81.67, p = 0.00$). Queer, heterosexual, and bisexual men reported more condomless anal sex with their TW partner ($X^2 = 7.89, p < .05$). A majority of men in all groups reported also having a casual male partner in the past 6 months: 90% of bisexual, 88% of gay and queer, and 66% of heterosexual men. Gay and heterosexual men were less likely to know their HIV status ($X^2 = 26.01, p = 0.00$), with more heterosexual men (12%) never testing for HIV. Queer men were more likely than any other subgroup to have ever been prescribed PrEP, with heterosexual men the least likely among all respondents to have ever been prescribed PrEP ($X^2 = 24.57, p = 0.00$).

Conclusion: These findings are an essential first step toward informing outreach and risk-reduction strategies responsive to the lived experiences of cis men who partner with TW. Effective approaches to HIV prevention must acknowledge the heterogeneity of identity and relational dynamics among these men and their sexual networks.

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VIOLENCE, SUBSTANCE ABUSE, DEPRESSION, AND HIV/STI RISK AMONG MEMPHIS-BASED MSM

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Background: The syndemic impact of intimate partner violence (IPV), substance abuse (SA), and depression on HIV/STI risk is well established globally, particularly among women. Investigating psycho-social dynamics among individuals impacted by the US HIV/STI epidemic, including men who have sex with men (MSM), is critical to curbing transmission via evidence-based prevention and treatment interventions. In 2016, the Tennessee Department of Health joined the CDC National HIV Behavioral Surveillance network to better understand HIV/STI risk behaviors among MSM. The objective of this analysis was to understand the landscape of IPV, SA, and depression, and its association with HIV/STI risk behavior among Memphis-based MSM.

Methods: During August-December 2017, interviewer-administered surveys assessed IPV, SA, depression, and HIV/STI risk behavior among adult MSM recruited at popular venues. We estimated prevalence of recent (past 12 months) IPV, SA, and depressive symptoms and overlapping correlates (e.g., IPV/SA, IPV/SA/depression). Subsequently, bivariate associations between IPV, SA, and depression, and HIV/STI risk behavior (i.e., sex exchange) were examined.

Results: Of 356 participants, 17% reported recent IPV, 41% reported SA, and 16% reported at least sometimes experiencing depressive symptoms; 13% reported recent sex exchange. No significant differences in reported IPV, SA, or MH were observed across age or race/ethnicity categories. Sex exchange was reported more frequently by those who experienced IPV compared to those who did not (34% vs. 9%, $p < 0.001$) and more so among participants who reported all three overlapping correlates (50%).

Conclusion: Our data suggest that MSM in Memphis are largely impacted by a syndemic of violence, SA, and depression, affecting all demographics. Moreover, while IPV alone may be a significant correlate of HIV/STI risk, the combination of IPV, SA, and depression may amplify risk. Findings will inform local partnership efforts in the development of biomedical and psycho-social programs to facilitate HIV/STI prevention efforts among multiple MSM communities.

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10:30 AM-11:30 AM

ENHANCING MENTAL HEALTH CARE IN PRIMARY CARE: ADDING A CLINICAL PHARMACIST TO THE EMBEDDED BEHAVIORAL HEALTH & PRIMARY CARE TEAM

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Primary care (PC) has become the de facto mental health system (Kessler et al., 2005), and the demand for embedded behavioral health (BH) and psychiatric services is great. For instance, the prevalence of depression in PC is 10% (Spitzer et al., 1994), and nearly half of appointments for psychotropic medications are with primary care physicians (PCPs; Pincus et al., 1998). With the increased demand for psychiatric and BH services, systems become strained trying to meet patient demand while adhering to best practices. To navigate these challenges, the authors have embedded a clinical pharmacist with a BH background into an internal medicine team of interdisciplinary providers, including embedded BH, to improve mental health care and address potential care gaps. The pharmacist's primary role is to support PCPs in the medication management of patients with mild-moderate depression and anxiety. Additionally, the pharmacist performs several behaviorally-oriented roles such as: delivering psychoeducation and motivational interviewing, monitoring adherence, administering screeners, and hosting conjoint visits with BH providers. The current study aims to present utilization and satisfaction data from the first 11 months of this pharmacy pilot. A total of 142 (69% female) patients completed 390 visits with the pharmacist. Results show a decrease in average PHQ9 scores across 14 weeks of treatment (13pt - > 4.5pt), indicating remission of depression. Satisfaction surveys (Likert scale of 0-5, 5 being the highest) were administered during the halfway mark of the pilot, which indicate a positive response; patient satisfaction: n=18, average score of 4.85 and provider satisfaction: n=7, average score of 4.52. Moreover, increased adherence to quality metrics of appropriate patient follow-up following medication initiation and best practice guidelines for depression screening were evidenced. Recruiting behaviorally trained clinical pharmacists may alleviate the cost-prohibition and scarcity burden of hiring psychiatrists, particularly for smaller practices, while allowing for more appropriate patient care cases to be escalated to psychiatrists. A paucity of practices have employed embedded BH clinical pharmacists, though published data is largely limited to Veterans Affairs populations or community health centers (Chavez & Kosiog, 2019). This study contributes data from a large private health system in an established integrated primary care model.

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10:30 AM-11:30 AM

PILOT STUDY OF A MULTICOMPONENT INTERVENTION TO INITIATE HEALTH BEHAVIOR CHANGE IN PRIMARY CARE: THE KICKSTART HEALTH PROGRAM

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There is a current movement to integrate behavioral health into primary care settings in order to better prevent and manage chronic illness. Group interventions are commonly conducted to provide services to several individuals at once; however, groups are typically tailored to one disease or condition (e.g., chronic pain, diabetes), despite the fact that patients typically present with multimorbidity. Targeting multiple health behaviors (i.e., diet, exercise, and stress) for a multimorbidity population may be ideal for the prevention and treatment of chronic illness in primary care. Few theoretical frameworks and treatment programs incorporate a combination of techniques to address such complex needs, and fewer still have been tested in medical settings, such as primary care. The current study, therefore, describes the development of a novel intervention for multiple health behavior change, The Kickstart Health Program, which integrates components of cognitive, behavioral, acceptance, motivational enhancement, and experiential therapies into a flexibly-delivered group therapy designed for primary care delivery. This program teaches health behaviors in vivo (e.g., group meditation and exercise) and incorporates rolling recruitment to reduce attendance burden. We pilot tested this program in a family medicine clinic. Of 22 patients who expressed interest in the program, 13 attended at least one session and completed measures of self-efficacy, overall perceived health and well-being, physical activity, and mindfulness practice at baseline, 5, and 10 weeks. Some participants reached their individual health goals, and this was reflected in qualitative responses. Patients who attended the program reported increases in overall days practicing mindfulness meditation ($p=.003$, $d=1.24$). Patients also reported clinically significant reliable change in overall perceptions of health and well-being. Significant increases in physical activity and self-efficacy were not detected in this sample; however, clinically relevant improvement occurred among patients who attended multiple sessions. We conclude that The Kickstart Health Program offers a unique approach to health behavior change in primary care and may be useful in teaching mindfulness meditation and influencing overall health and well-being.

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10:30 AM-11:30 AM

UTILIZATION OF THE STANFORD INTEGRATED PSYCHOSOCIAL ASSESSMENT FOR TRANSPLANTATION AS A MEASURE OF LIVER TRANSPLANT CANDIDACY

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Background: The Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT) is commonly used as a comprehensive screening tool to assess transplant surgery candidacy. This tool has not yet been validated in liver transplant patients but may be useful for evaluating candidacy in this population. The aim of the present study was to assess the association between provider-designated SIPAT scores and psychosocial self-report measure scores (PROMIS 43) to establish concurrent validity.

Methods: Data were collected from 48 liver transplant candidates at the University of Kansas Medical Center during a required pre-surgical psychological evaluation prior to receiving their operation date between December 2017 and March 2019. The sample was split equally by gender. Participants completed PROMIS-43 questionnaires prior to their appointment. PROMIS-43 includes clinical scores for physical function, anxiety, depression, fatigue, sleep disturbance, social role, pain interference, and pain intensity. Providers then assigned a SIPAT score based on the clinical interview. Descriptive analysis using both SIPAT and PROMIS-43 scores was conducted using SPSS.

Results: One-way ANOVAs were run evaluating the relation between the eight PROMIS domains and the SIPAT overall candidacy score. Results indicated that 7 out of the 8 subscales on the PROMIS were significantly related to SIPAT candidacy (i.e., Anxiety and SIPAT candidacy ANOVA was $F(2,44) = 4.602$, $p < .05$), with the sleep disturbance subscale not being significantly related. Additional post hoc analyses were run to evaluate these relations. Overall, minimally acceptable candidates, based off the SIPAT, had lower functional scores across the board.

Discussion: Preliminary analyses examining concurrent validity of the SIPAT in the liver transplant recipient population appear strong with all clinical scales of the PROMIS 43 significantly predicting total SIPAT score, with the exception of sleep disturbance. The SIPAT's total score may be a good overall indicator of a liver transplant recipient's candidacy. Future research assessing other psychosocial predictors as well as other health outcomes are necessary in the validation of the SIPAT as a tool in the liver transplant recipient population.

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WHO AM I NOW? POST-TREATMENT IDENTITIES OF BREAST CANCER PATIENTS AND THEIR CORRELATES

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After cancer treatment, individuals commonly report their sense of identity is challenged as they contend with physical changes and shifts in their goals and priorities. The extent to which they identify as a “cancer survivor” varies and is often dynamic over time. The limited research in this area has suggested that certain identity types may be associated with greater well-being, but few studies have examined how sense of identity and specific psychosocial outcomes are correlated.

As part of an American Cancer Society-funded randomized controlled trial of group interventions for breast cancer survivors (BCS), this study examined psychosocial correlates of self-reported cancer identity types at baseline. Participants included 59 early-stage BCS who were ≥ 3 months post-treatment with at least moderate levels of distress. Adoption of cancer identity types (cancer victim, cancer patient, person who has had cancer, cancer survivor) was evaluated via the Cancer Identity Assessment. Psychosocial outcomes assessed included anxiety, depression, meaning, purpose, post-traumatic growth, and fear of recurrence. Frequencies of the identity types and bivariate correlations between identities and psychosocial outcomes were calculated.

Results showed that participants identified at least ‘somewhat’ with the following: 51% victim, 69% patient, 88% person who has had cancer, and 73% survivor. Notably, 90% of individuals identified at least ‘somewhat’ with more than one identity.

Endorsing a survivor identity was associated with higher levels of meaning ($r=.364$, $p < .01$), purpose ($r=.313$, $p < .05$), and post-traumatic growth ($r=.549$, $p < .01$), and lower levels of depression ($r=-.259$, $p < .05$). In contrast, endorsing a cancer victim identity was associated with higher levels of depression ($r=.306$, $p < .05$). Time spent thinking about the possibility of cancer recurrence was positively correlated with endorsing a cancer victim ($r=.286$, $p < .05$) and cancer patient identity ($r=.265$, $p < .01$).

Results demonstrated that individuals can adopt multiple identities, suggesting the complexity of these constructs. Though findings indicate that identifying as a cancer survivor is linked to more adaptive outcomes as compared to identifying as a cancer victim, data should be interpreted with caution. Further research is needed to understand whether certain identity types are linked to better adjustment, and if so, whether it is clinically beneficial to facilitate adoption of these identity types.

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EFFECTS OF REPLAY AND REHEARSAL EXPRESSIVE WRITING WITH MENTAL HEALTH CONCERNS

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Background: The expressive writing of replaying previous interactions related to stressors or traumas has been found to be effective while expressive writing in the rehearsal context for expected conversations or interactions has remained unexplored. The purpose of this study was to examine the effects of rehearsal expressive writing compared to the replay and control groups four weeks after writing.

Methods: Eligible participants were recruited mainly from a large university in the southwestern United States. A randomized, three-group (control, rehearsal, and replay) and 3-time (pre-test, post-test, and 4-week follow-up) experimental design was conducted. Psychological adjustment (Mental Health Inventory-18, MHI), self-perceived stress, PROMIS depression and anxiety, social integration, loneliness, and coping (Brief COPE) were measured at baseline (pre-test), after the fourth day of writing (post-test), and four weeks (follow-up). Repeated measures analyses of variance (RMANOVA) were used to examine the time and time by group effects.

Results: 272 out of 384 participants were eligible; 132 were randomly assigned to three groups and 99 completed all 5 tasks (29 control, 32 replay and 38 rehearsal). The 132 study participants were predominantly female (63%) with an average age of 24 years. Fifty-six (42%) were White; 41 (31%) were Asian and 25 (19%) were Hispanic. Fifty-five reported mental health diagnosis with depression as the highest (42, 76%) and followed by anxiety (35, 64%). 3 by 3 RMANOVA showed significant time effects in MHI, self-perceived stress depressive and anxiety symptoms and coping while no significant effects were found in social integration or loneliness, or coping behaviors. No group effects were observed. 2 group by 3 time RMANOVA found significant time by group differences in MHI (control versus replay).

Conclusions: The small and predominantly female sample and short intervention period could explain the results of no significant time by group effects. Future studies should investigate with a larger and more balanced sample. Not only does this study work to theoretically extend a large body of research on expressive writing and methodologically test an existing therapeutic paradigm, but it also has translational research applications for individuals coping with mental illness as well as for clinical therapists and psychologists.

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10:30 AM-11:30 AM

RELATIONSHIP BETWEEN PERCEIVED STRESS AND EXECUTIVE FUNCTIONING: THE MODERATING ROLE OF COMBINED EXERCISE AND THERMOTHERAPY

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Psychosocial stress is typically negatively associated with cognitive functioning yet certain health behavioral stressors that cause physiological and psychological strain can in turn, induce adaptive, therapeutic responses. Specifically, evidence suggests exercise and thermotherapy (sauna, steam-room), independently, can reduce acute and chronic stress and improve executive functioning (EF). The purpose of this analysis was to examine whether aerobic exercise followed by immersive, whole-body heating via sitting in a steam-room (vs. air-conditioned room) moderated the relationship of stress reduction over time with EF. Pre-hypertensive (SBP/DBP $M = 130/87$) adults ($M = 46$ years old; 58.5% female) received 14 weeks of supervised aerobic exercise (50-75% max HR, 50 minutes) sessions, 3x per week, and were randomized to either 10-20 min sessions in a ~90° F steam-room ($n = 21$) or time-matched seated rest in a lobby ($n = 20$). Perceived stress (1-item, 1 = None to 5 = A lot) was measured immediately after exercise at every session and EF components, i.e., inhibition control (flanker task % cost in reaction time [RT]) and working memory (Sternberg task, RT) was assessed at baseline (M0) and month 4 (M4) follow-up. EF at M4, change in post-exercise stress, and group were entered in a moderation analysis (using SPSS and Hayes' PROCESS macro), adjusting for estimated cardiorespiratory fitness, family history of CVD, smoking status, living alone, compliance with hypertension-reduction health behaviors, & respective M0 cognitive performance). No main effect of group was found, yet a significant interaction was found between group and stress over time [b (se) = -3.07 (1.42), $p < .05$] in predicting flanker RT scores. Perceived stress increased over time in the heat therapy group [M s (SD) = 0.48 (1.13) vs. 0.17 (0.99)]. Simple slopes analysis revealed that those in the steam-room group having higher perceptions of stress over time showed better flanker % cost RT [b (se) = -2.82 (.97), $p < .05$]. Concurrently, reduction in heart rate response to exercise over time, for the steam group, appeared to serve as a mediator for group effects on flanker RT. Similar patterns were observed for working memory. Sensitivity analyses to determine impact of contamination (non-steamer trying steam on own, $n = 2$), yielded no contradictory results. Together, results suggest that regular heat therapy (in combination with exercise) may increase perceptions of stress and improve cognitive performance. These data support the growing evidence of thermotherapeutic health benefits, particularly for those with hypertension.

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10:30 AM-11:30 AM

EXAMINING THE PREVALENCE OF MENTAL HEALTH DISORDERS AND RATES OF HELP-SEEKING AMONG UNIVERSITY-ENROLLED, BLACK MEN

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Background: Black men in college represent a subgroup of emerging adults who are at increased risk of developing mental health disorders (MHDs), such as anxiety and depression. Such risk has been attributed to disproportionate experiences with everyday racial discrimination and high levels of psychological distress. Despite being at higher risk, university-enrolled, Black men are not utilizing mental health or health resources at optimal rates. The current evidence base describing prevalence of MHDs and health services utilization among Black men in college is limited. The present study addresses this by examining mental health prevalence among university-enrolled, Black men and their rates of health services utilization.

Methods: Data were analyzed from the Spit for Science survey, a longitudinal research study at a large, urban, public university. Participants are given surveys in their freshman year and follow-up surveys every spring thereafter. Measures included: mental health disorders (depression and anxiety, as measured by the Symptom Checklist 90) and campus health services utilization (counseling center, health services, wellness center, and recreational sports). We conducted descriptive analyses to determine MHD prevalence and utilization rates. Mann Whitney U tests to compare prevalence rates to White men and Black women; and, Chi-squared tests to compare rates of utilization among groups.

Results: 681 Black men, 2329 White men, and 1679 Black women were included in this analysis. In Year 1, 86.2% of Black men reported experiencing any MHD symptoms compared to 88.1% of White men and 91.8% of Black women. By Year 4, 73.2% of Black men reported experiencing any MHD symptoms compared to 89.2% of White men and 87.9% of Black women. Also, in Year 1, Black men (19.6%) utilized counseling services at lower rates compared to White men (35.7%), $p = .031$. In years 3 and 4, there were significant differences in utilization of health services between Black women and Black men, $p = .007$ (year 3) and $p = .026$ (year 4). Chi-Squared tests also showed significant differences in the utilization of recreational sports between Black men (62.7%) and Black women (41.5%), $p = .009$.

Conclusion: The key findings suggest that Black men report less experiences with anxiety and depression than White men and Black women. Results also show that White men and Black women utilize certain services more than Black men. Implications for future research are discussed.

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10:30 AM-11:30 AM

GENDER AND RACIAL/ETHNIC DISPARITIES IN ASSOCIATIONS BETWEEN WEIGHT MISPERCEPTION AND TRENDS OF SUICIDAL BEHAVIORS

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Background: Suicide is the second leading cause of death for adolescents. Previous studies have identified associations of actual and perceived weight with suicidal behaviors. Limited research, however, examined the effect of weight misperception (i.e., mismatched actual-versus-perceived weight categories) on the trends of suicidal behaviors. Furthermore, plausible gender and racial/ethnic disparities in these associations are rarely unknown. Such information is important to guide suicide intervention targeting at-risk adolescents with weight concerns. This study aims to examine gender and racial/ethnic disparities in associations between weight misperception and trends of adolescent suicidal behaviors.

Methods: Data were derived from the 1999-2017 Youth Risk Behavior Survey, a school-based survey of a nationally representative sample of students in grades 9-12 ($n=147,929$, 50.5% female). Weight misperception was constructed by BMI-for-age weight status (i.e., obesity, overweight, normal, underweight) and self-perceived weight (i.e., very underweight, slightly underweight, about-the-right weight, slightly overweight, very overweight). Suicidal behaviors were self-reported ideation, plan, attempts, injury by attempts). Logistic regression analyses were used to examine associations between weight misperception and trends of each suicidal behaviors by sex and racial/ethnic groups. Linear and quadratic trends were examined, controlling for student grade levels.

Results: Male adolescents with weight misperception showed increasing trends of suicidal ideation ($OR=1.03$, $p < .01$), suicide plan ($OR=1.03$, $p < .05$) and injury by suicide attempts ($OR=1.10$, $p < .05$), with slower speed in later periods ($p < .05$). Stratified analyses indicated that with misperceived weight, Asian females ($OR=1.19$) and other-race males ($OR=1.24$) had increasing trends of suicidal ideation; Black males had increasing suicide plan ($OR=1.26$); other-race females had increasing suicide attempts ($OR=1.18$); White females ($OR=1.12$) and males ($OR=1.30$) had increasing injury by attempts ($p < .05$).

Conclusions: Gender and racial/ethnic disparities were uncovered in trends of different suicidal behaviors among adolescents with weight misperception over the past decade. Special attention shall be paid into males, Asian females, other-race females and White females with distorted weight perception. Health practitioners are suggested to screen actual and self-evaluated weight to detect at-risk adolescents. Suicide interventions integrating health education and promotion of body image and weight perception could be more effective.

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10:30 AM-11:30 AM

COGNITIVE IMPAIRMENT FOLLOWING MULTIPLE CONCUSSIONS IN COLLEGE-AGE ATHLETES

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Among existing concussion and mild traumatic brain injury literature, few studies have examined how having at least one prior concussion affects cognitive performance (Collins et al., 1999). Whereas some previous studies already highlight the negative effects after concussion, many of these studies are five or more years old and dichotomize the participants into groups of 'previously concussed' and 'not previously concussed,' without considering the actual number of previous concussions, which could potentially provide a more nuanced understanding of the role concussions play in cognitive performance. The objective of the present study was to assess whether an association exists between a history of multiple concussions and cognitive performance on tasks addressing multiple aspects of cognition. Data collection included an online self-report survey about participants' health, sports, and concussion history, and a computerized three-part cognitive assessment battery. This assessment included a working memory task, a decision-making task, and a response inhibition task.

Participants included 51 male, club athletes ($M = 19.64$ years old, $SD = 1.22$, range = 18-23) recruited from a university in the southeast United States. Forty-eight of the participants were right-handed and three were left-handed. Exclusion criteria included an existing or prior learning disability diagnosis, ADHD, or other serious neurological issues. Participants received \$10 as compensation. The participants were also informed the highest-performing subjects would receive one of two \$25 gift cards once data analysis was complete. Results revealed that number of concussions was associated with total responses on no-go trials ($r = .364$, $p = .009$), no-go trial accuracy ($r = -.364$, $p = .009$), average reaction time ($r = -.321$, $p = .023$), reaction time on rare-go trials ($r = -.339$, $p = .016$), and number of perseverations ($r = .424$, $p = .002$) on the Go/No-Go response inhibition task. Number of concussions was also associated with accuracy on the working memory task for trials where presented numbers summed to 10 ($r = -.403$, $p = .003$). Results support the notion that multiple concussions impact performance on a range of cognitive tasks, as well as provide evidence for using a continuous index rather than a dichotomous concussion research protocol.

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10:30 AM-11:30 AM

TAKE A TIMEOUT: FEMALE STUDENT ATHLETES' MENTAL HEALTH NEEDS, RESOURCE UTILIZATION, AND PRIORITIES FOR PROGRAMMING ON CAMPUS.

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Mental health among female collegiate athletes is a public health concern, with 28.1% of female athletes exhibiting clinically-relevant depressive symptoms compared to 17.5% of their male counterparts. Moreover, one-third of female athletes report attitudes and symptoms placing them at increased risk for disordered eating. Concerns around stigma for reporting mental health status combined with the underutilization of mental health services adds another level of complexity for identifying and addressing mental health among National Collegiate Athletic Association (NCAA) members.

Female student athletes ($n=24$) at a southern university were recruited to participate in a 20-minute online needs assessment survey regarding mental health status, resource utilization, and priorities for tailored programming on campus. Measures included the Kessler Psychological Distress scale, health services utilization questions, and feedback on fourteen proposed content topic areas and nine delivery methods being considered for a program tailored to NCAA female student athletes. Descriptive statistics were used to summarize findings of the needs assessment.

A third of respondents ($n=8$, 33.3%) reported a previous medical diagnosis of anxiety. Five respondents (20.8%) reported a clinical diagnosis of depression. General health status was most frequently rated "somewhat good" ($n=10$, 41.7%), while mental health status was rated "average" ($n=9$, 37.5%). The majority of respondents were likely to have moderate mental health disorder ($n=18$, 78.3%), while fewer demonstrated a likelihood of severe ($n=3$, 13.0%) or mild ($n=2$, 8.7%) disorder. Ten students (43.5%) reported receiving psychological services in the past 12 months.

Of the fourteen topics presented for tailored mental health programming, disordered eating was the highest priority to address among female student athletes ($n=20$, 86.9%), followed by signs of mental distress in teammates ($n=19$, 82.6%), managing emotions ($n=17$, 73.9%), managing stress ($n=16$, 70.0%), body image ($n=16$, 70.0%), coping mechanisms ($n=15$, 65.2%), and life balance ($n=14$, 60.9%). Regarding methods for receiving program content, the majority of respondents requested podcasts ($n=16$, 69.6%) or social media ($n=15$, 65.2%). One-on-one approaches were preferred to team-based (78.3% vs. 56.5%) for program delivery.

Findings from this needs assessment informed the development of twelve tailored mental health podcasts using a narrative approach to teach Cognitive Behavioral Therapy skills to female student athletes. The podcasts will be pilot-tested in a group of female student athletes ($n=25$) during fall semester 2019. Qualitative feedback and acceptability data from the pilot study will be included in this presentation. This study aims to provide an innovative solution to address the growing demand for mental health services among female collegiate athletes.

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10:30 AM-11:30 AM

IMPAIRED DRIVING BEHAVIORS, CHARACTERISTICS AND SUICIDE PLANNING: RESULTS FROM THE 2017 YOUTH RISK BEHAVIOR SURVEY.

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Introduction: Of the many transitions occurring during adolescence, unsupervised operation of a vehicle is notable. While substance-impaired driving is a known risk factor for unintentional injury, it may also bear relevant associations to mental health and suicide outcomes. The objective of this study was to determine the relationship between being an underage impaired driver and suicide risk.

Methods: The 2017 Youth Risk Behavior Survey, which examines U.S. high school students in grades 9 through 12, was utilized (n=14,765). Predictor variables were impaired driving behaviors (e.g., consumption of alcohol or marijuana when driving a vehicle); sadness/hopelessness; cognitive difficulty (item indicated as “because of a physical, mental, or emotional problem, do you have serious difficulty concentrating, remembering, or making decisions?”); education level; race/ethnicity; gender; and sexual orientation. The outcome variable was suicide planning during the last 12 months. Binary logistic regression analyses in SAS 9.4 were utilized to predict suicide risk in survey respondents.

Results: Underage respondents who reported drinking alcohol and driving had higher odds of planning a suicide attempt (OR=0.588; 95% CI=0.426-0.811). Although marijuana-impaired driving behavior had an overall significant relationship to suicide planning (p=0.0273), non-marijuana-using drivers were 1.2 times more likely to have made a suicide plan than marijuana-using drivers (OR=1.170; 95% CI=1.018-1.345). American Indian and Native Hawaiian (p=0.0311); Hispanic (p=0.0004); and multi-race youth (p=0.0075); as well as those who identified as Bisexual (p<.0001) showed a strong likelihood to contemplate and plan suicide. Being sad or hopeless (p<.0001; β =1.0274) and having any cognitive difficulty (p<.0001; β =0.3873) also strongly predicted planning of a suicide attempt.

Conclusion: Previous studies have shown the significant connection between substance abuse and mental health outcomes. The present study further demonstrates that adolescents’ participation in risky, impaired driving behavior is linked to degrees of suicidality such as ideation and planning. Reduction of suicide risk in adolescents and young adults remains a focal point in public health promotion. Therefore, it may be essential to develop interventions that go beyond punitive measures to encourage mental health screenings for adolescents who participate in these risky behaviors. Injury prevention and road safety programs should also consistently include an emphasis on mental health care and help-seeking.

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10:30 AM-11:30 AM

VALIDATION OF THE VALUING QUESTIONNAIRE IN A CARDIOVASCULAR DISEASE SAMPLE

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Values are characterized as personally selected and constructed guiding principles which intrinsically motivate patterns of behavior (Hayes et al., 2006). The Valuing Questionnaire (VQ; Smout et al., 2014) is a self-report assessment of values-consistent living which includes two subscales measuring *Progress* toward values and *Obstruction* of values. Because engaging in values-consistent positive health behaviors contributes to disease prevention and management, the VQ has been utilized for assessment in behavioral medicine treatment outcome studies (Graham et al., 2016). However, the psychometric properties of the VQ have not been widely validated among chronic disease and at-risk populations. Therefore, the current study aimed to test the psychometric properties of the VQ in a sample of participants (N = 382) with a history of cardiovascular disease (CVD; n = 127, 33.2%) or multiple significant CVD risk factors, a population for whom activation of values-consistent living can support the wholesale health behavior change which is often necessary for meaningful risk reduction. Participants ($M_{age} = 42.2$, $SD = 11.97$; 50.4% female) completed the VQ as part of an anonymous self-report Qualtrics questionnaire via the Amazon Mechanical Turk platform. Confirmatory factor analyses supported the two subscales presented in the measure’s original development and validation study, and both subscales evidenced good internal consistency (Progress: $\alpha = .87$, CI = .80-.86; Obstruction: $\alpha = .83$, CI = .80-.86). The VQ also performed well in terms of known groups validity, convergent validity with related constructs (health-related quality of life; psychiatric symptoms including depressive and anxiety symptoms, stress, and cardiac anxiety; values and psychological flexibility), and concurrent validity with the Values subscale of the Comprehensive Assessment of ACT Processes (CompACT), as well as incremental predictive validity relative to the CompACT Values subscale in terms of health-related quality of life. The current study provides evidence in support of the validity and reliability of the VQ for assessing values-consistent living in behavioral medicine populations and treatment outcome studies.

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D261

10:30 AM-11:30 AM

PSYCHOMETRIC PROPERTIES OF THE ROSENBERG SELF-ESTEEM SCALE AND SOCIAL PHYSIQUE ANXIETY SCALE IN US HISPANIC ADOLESCENTS

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Background: Hispanic adolescents in the US may be more likely to experience body image dissatisfaction and decreased self-esteem due to higher weight status relative to their other US non-Hispanic peers. In social physique anxiety (SPA), self-appraisal is dependent upon both perception of one's body as well as the proxy perceptions of others of their physique. Self-esteem can be protective against SPA regardless of weight status. Although SPA is measured among Hispanics, the psychometric properties have not been tested in a non-European Hispanic sample. The aim of the current study is to examine the psychometric properties and factor structure of the Social Physique Anxiety Scale (SPAS) and Rosenberg Self-Esteem Scale (RSES) in a sample of middle school-aged Hispanic adolescents living in the United States.

Methods: A total of 308 middle school students (68.4% female; age $M=12.17$, $SD=1.03$) completed the RSES and the SPAS. A confirmatory factor analyses using the Lavaan statistical software package in R was used to test the factor structure of the SPAS and the RSES. The maximum likelihood estimation was used to evaluate the performance. A multigroup confirmatory factor analysis using configural and metric invariance was used to further examine the measurement invariance between males and females for both scales.

Results and Conclusions: The total reliability for the RSES ($\alpha=.82$) and the SPAS ($\alpha=.86$) were acceptable. The results from the current sample suggests that the RSES was best fit by a two factor model ($X^2(34)=49.34$; $CFI=0.98$; $RMSEA=0.04$). For SPAS, the two-factor model fit the data ($X^2(43)=120.46$; $CFI=0.94$; $RMSEA=0.07$) in alignment with findings from other non-Hispanic samples. Both the two-factor and bifactor SPAS models are further discussed, including previously identified issues with a two-factor model pertaining to method effects of negatively and positively worded items. The use of the bifactor model, a method in item response theory where items load on a primary and secondary dimension, may correct for the method effects of the two factors that affect the model fit of the parsimonious general model. Both the RSEA and SPAS scales were measurement invariant by sex suggesting that the scale performs equally well in male and female Hispanic adolescents. Although the SPAS was invariant by sex, the fit was only marginally acceptable, suggesting there may be some differences in the scale between males and females ($X^2(96)=182.03$; $CFI=0.93$; $RMSEA=0.07$). Overall both scales demonstrated factorial validity and reliability for use in adolescent US Hispanic samples.

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PRELIMINARY DEVELOPMENT OF AN INSTRUMENT FOR ASSESSING MOTIVATIONAL INTERVIEWING IN PHYSICAL THERAPY

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Motivational interviewing (MI) is a communication strategy for facilitating behavior change and involves the use of communication skills (e.g., use of open-ended questions, reflections, and summaries) and beliefs that influence therapist behavior during therapeutic interactions (the so-called "spirit" of MI). Successful physical therapy (PT) outcomes depend on patients changing their behavior in multiple areas, such as attending appointments, using adaptive equipment, incorporating lifestyle changes, and adopting a new exercise plan. Despite a growing emphasis on MI in the curriculum of PT degree programs, there is limited research on the use of MI in PT practice. This study aimed to assess the construct validity of an instrument evaluating communication skills and beliefs consistent with MI in PT. Therefore, a survey was developed using content experts in both PT and MI: The Motivational Interviewing in Physical Therapy (MIPT) survey. The survey was developed to capture three hypothesized constructs: (1) use of communication skills emphasized in MI (e.g., use of open-ended questions, reflections, and summaries); (2) beliefs consistent with MI spirit (e.g., emphasizing collaboration with the patient, respecting the patient's autonomy in making decisions); and (3) beliefs inconsistent with MI spirit (e.g., emphasizing persuasion or fear as catalysts for patients' behavior change). The MIPT was distributed to practicing physical therapists ($N=802$) and a confirmatory factor analysis (CFA) was used to evaluate the factor structure of the MIPT. Several CFA models were evaluated. Poor fitting items were removed from the model and the best fitting model consisted of two separate constructs: consistent (CON; a combination of MI skills and MI-consistent belief items) and inconsistent (INCON; MI-inconsistent belief items); $\chi^2(188)=656.57$, $p<0.01$, $RMSEA=0.056$ [0.051, 0.06], $CFI=0.94$, $SRMR=0.05$. Preliminary results from this analysis indicate that the MIPT demonstrates a satisfactory factor structure of two unrelated constructs (CON and INCON), $r=0.00$, $p=0.79$. Future work aims to validate the MIPT by evaluating if the survey can predict real-world physical therapist behavior consistent with MI, mediators of behavior change, and patient outcomes.

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10:30 AM–11:30 AM

RECRUITING FOR BEHAVIORAL RESEARCH DURING HEMATOPOIETIC CELL TRANSPLANT: LESSONS LEARNED FROM THE WISE STUDY

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Background: The annual number of hematopoietic cell transplants (HCT) is expected to increase to 100,000 by the year 2030. Physical and psychological symptoms are common and serious in HCT recipients, and these symptoms are highest during treatment. Yet, research on behavioral interventions to reduce symptoms is often conducted post-transplant. Intervening during transplant could reduce symptoms when burden is highest. To promote research during this important period, we describe unique challenges and lessons learned when recruiting HCT patients prior to transplant for an intervention during treatment.

Methods: We are conducting a multisite randomized controlled trial of a behavioral intervention to reduce symptoms in people undergoing HCT. In 6 months, we approached 139, screened 99, and enrolled 73 participants who met our eligibility criteria. We have systematically tracked barriers and facilitators to recruitment and enrollment in the pre-transplant HCT population.

Results: We identified 3 major challenges to enrollment and have implemented multiple solutions. The first major challenge was timing of approach. Initially we tried enrolling patients immediately after transplant was scheduled, but patients reported feeling overwhelmed with pre-transplant responsibilities, leading some to decline. Waiting until hospital admission, or immediately before admission, allowed us to avoid interfering with pre-transplant activities. Second, patients reported experiencing fear related to anticipated physical symptoms and expressed concern about committing to study procedures they may not be able to complete. We developed more flexibility in timing of study procedures. We allowed longer windows for study task completion and expanded our study scripts to more carefully explain the flexibility to accommodate participants' schedules and energy levels. Third, we found that developing clear channels of communication with the clinical team was imperative to recruitment success. These changes reduced the number of patients who declined due to feeling overwhelmed or too busy from 22% at 8 weeks of recruiting to 15% at 6 months.

Conclusions: Recruiting HCT patients prior to transplant is possible when protocols are structured to include support of patient needs, flexible windows, and engagement of the clinical team. Using these strategies, behavioral interventions can be more effectively implemented during this critical time.

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10:30 AM–11:30 AM

PREDICTING BYSTANDER INTERVENTION INTENTIONS IN COLLEGE STUDENTS: A REASONED ACTION APPROACH

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Background: Considered the gold standard for sexual assault prevention in colleges, bystander intervention (BI) is an approach that teaches individuals to take action in potential sexual assault situations. Increased BI behavior in college populations could drastically reduce sexual assault victimization in young adults. It is important to determine the factors that influence whether a person will engage in BI in order to create relevant and tailored interventions to promote BI and reduce sexual assault. In conjunction, the Reasoned Approach (RAA) and BI can create and evaluate ownership for one's community and capitalize on one's expectation to help.

Purpose: To examine predictors of undergraduate college student intentions to engage in BI using the RAA.

Methods: College students were recruited via an online survey disseminated in general education courses at two separate universities in the US (one in the north-east, and one in the west) measuring intentions, attitudes (including cognitive and affective attitudes), perceived norms (including injunctive and descriptive), and perceived behavioral control (self-efficacy and autonomy). Linear regression models were used to understand how the core constructs of the RAA regressed on intentions.

Results: The sample consisted of 291 undergraduate students between 18 and 24 years old (60.1% women and 80.4% lowerclassmen). Results showed that instrumental attitudes, experiential attitudes, capacity, and autonomy significantly predicted intentions to engage in BI ($R^2=0.55$). Injunctive norms and descriptive norms were not significant predictors.

Discussion: Given the prevalence of sexual assault in college students, it is crucial to identify determinants of BI engagement in college students and explore the interactions among these variables. Results from this study will be used to inform the development of theory-driven, and evidence-based interventions to promote BI. Additionally, study results will provide more in-depth insight into further examining the complex relationships among these predictors.

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D265

10:30 AM-11:30 AM

THE EFFECT OF TEMPORALLY-DENSE SAMPLING ON VARIANCE OF AFFECT IN ECOLOGICAL MOMENTARY ASSESSMENT PROTOCOLS

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Introduction: Intensive longitudinal study designs using ecological momentary assessment (EMA) are advantageous for collecting self-report data in real-time and in real-world settings. A novel implementation of EMA is the use of temporally-dense sampling (~every 30 min) with a short survey (~10 items) in order to leverage frequent modern smartphone use. However, less is known about the extent to which such temporally-dense protocols impact compliance rates and capture additional inter- and intra-individual variability beyond relatively sparse EMA sampling schedules (~every 2 h).

Objective: The purpose of the study was to compare temporally dense and sparse EMA sampling protocols in terms of compliance rates and degree of inter-/intra-individual variability of affective variables.

Methods: A sample of 20 women ($M_{age}=42.8$, $SD=6.01$, 60% Hispanic) participated in (1) a temporally-sparse EMA protocol (~20-question surveys randomly prompted every 120 ± 15 min across 7 days, answered in 3.3 ± 0.3 min) and (2) a temporally-dense EMA protocol (15-question surveys prompted every 30 ± 10 min across 2 days, answered in 1 ± 0.5 min). Affect items (happy, angry, sad, stressed) were self-reported during each EMA survey via smartphones. Mixed effects location-scale models were used to estimate between- (BS) and within-subject (WS) variance parameters of affect and test the effect of protocol on BS/WS variance.

Results: Compliance was higher in the temporally-dense (89.8%) than in the temporally-sparse (73.3%) protocol ($p < 0.001$). Happiness and stress showed significantly greater BS variance for the dense vs. sparse protocol ($ps < 0.05$). Anger, stress, and sadness showed significantly greater WS variance for the dense vs. sparse protocol ($ps < 0.05$). The sparse protocol did not yield significant deviation in WS variance between individuals, whereas the dense protocol had significant deviation in WS variance for all measures ($ps < 0.001$).

Discussion: Results indicate that temporally-dense EMA sampling may offer advantages for studying time-varying self-reported constructs. Moreover, there is also evidence to suggest that temporally-dense EMA may improve the ability to detect differences in response patterns between subjects, especially for variables thought to be trait-like (e.g., negative affect). Additional research is needed to determine a good frequency of EMA prompts and protocol length to maximize data collection without overburdening participants.

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HOW PRAGMATIC WAS IT? USING PRECIS CRITERIA TO ASSESS A DIGITAL WEIGHT GAIN PREVENTION INTERVENTION IN PRIMARY CARE

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Background: There is a need for real-world evidence to inform routine practice. Pragmatic trials are designed to offer insight into the implementation of evidence-based interventions within real-world settings among diverse populations. The pragmatic-explanatory continuum indicator summary (PRECIS) tool can help gauge trial correspondence with pragmatic principles.

Objective: To assess Balance, a 12-month pragmatic randomized controlled trial of a digital weight gain prevention intervention among research team members and leaders at a system of Federally Qualified Health Centers (FQHCs), using the PRECIS tool.

Methods: Participants (n=15) involved in the trial were recruited to review the PRECIS tool and trial protocol and to rate the pragmatic level of Balance on 10 PRECIS domains. Each rater independently assessed components of Balance using pragmatic and explanatory examples provided for each domain to score the trial description from 1, “extremely explanatory,” to 5, “extremely pragmatic.” We calculated the mean score and standard deviation for each PRECIS domain and determined inter-rater reliability for all scores using Gwet’s AC2.

Results: All 15 respondents (11 research team members and 4 stakeholders) rated the design of Balance as “mostly pragmatic” or “extremely pragmatic.” PRECIS domains for which the trial was rated as “extremely pragmatic” (defined as mean $> 4.5 \pm SD$) included: follow-up intensity (5 ± 0), comparison intervention (4.8 ± 0.4), primary trial outcomes (4.7 ± 0.4), and experimental intervention flexibility (4.5 ± 0.6). Domains rated as “mostly pragmatic” (defined as mean $> 3.5 \pm SD$) included: participant eligibility criteria (4.1 ± 0.6), practitioner adherence to protocol (4.0 ± 0.7) and participant compliance with intervention (3.7 ± 0.7). Overall inter-rater agreement for research team members and stakeholders at FQHCs showed consensus across PRECIS domains (Gwet’s AC2 = .76, 95% CI: .68 to .84).

Conclusion: Overall, the PRECIS assessment of Balance revealed the trial design to be “mostly” or “extremely” pragmatic. Areas in which the trial was deemed “extremely pragmatic” included utilizing clinic staff/resources and digital health strategies that extend weight gain prevention beyond clinical encounters. Using the PRECIS tool can inform collaborative trial design among research teams and health system leaders, yielding a pragmatic approach and informing evidence-based clinical care practices.

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A MOBILE SLEEP AND PHYSICAL ACTIVITY INTERVENTION FOR POST-9/11 VETERANS WITH CHRONIC INSOMNIA

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Difficulty falling asleep and staying asleep are common problems that affect over 30 million Americans. Additionally, military personnel and Veterans often have insomnia problems post-deployment. We proposed that insomnia could be improved by behavioral change including increased physical activity, which can be delivered and assessed via mobile health (mHealth) technologies. The goal of this project was to test whether enhancing physical activity (PA group) can improve the impact of a cognitive behavioral therapy (CBT)-based mobile self-management intervention (i.e., CBT-I Coach app) for insomnia, over and above the impact of the CBT-I app alone (CBT-I group). Participants also used a home-based sleep monitor (WatchPAT) to obtain objective sleep data, and a Fitbit to track steps (PA group goal of 10% per week step increase).

Thirty-three post-9/11 Veterans met criteria for insomnia and were enrolled. We compared sleep outcomes for the CBT-I + PA group vs. the CBT-I group over 6-weeks with measures pre- and post-intervention. Of 33 enrolled, 26 participants completed the full intervention (CBT-I + PA group: n=12; CBT-I alone group: n=14). There were no differences between groups (CBT-I + PA vs CBT-I alone) at final visit on WatchPAT recorded total sleep time, subjective sleep measures of the Insomnia Severity Index (ISI), Pittsburgh Sleep Quality Inventory (PSQI), or on Functional Outcomes of Sleep Questionnaire (FOSQ). However, analyses revealed clinically-significant improvements for both groups on the ISI, $t(25) = 5.64, p < .001$, FOSQ, $t(25) = -3.73, p < .01$, and the PSQI, $t(24) = 4.31, p < .001$. WatchPAT sleep data also revealed a significant increase in total time spent asleep between baseline ($m = 79.2, SD = 10.4$) and the last week ($m=83.5, SD=10.1$) of the intervention for both groups, $t(22) = -2.285, p = .03$.

There was no significant difference between the two groups on self-reported or total sleep time as measured by the WatchPAT. However, across both groups, we found an increase in both objective sleep time and subjective sleep quality. This study demonstrates that cognitive behavioral-based mobile apps for self-management of insomnia can improve sleep quality and quantity.

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COGNITIVE BEHAVIORAL THERAPY FOR CHRONIC PAIN IN PRIMARY CARE: IMPLEMENTATION AND OPIOID PRESCRIPTIONS AMONG VETERANS

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Over 50% of Veterans in primary care settings report chronic pain (i.e., chronic non-cancer pain [CNCP] that persists 3 months past expected healing time), 57% of whom are prescribed chronic opioid therapy (Edlund et al., 2014). Further, Veterans with mental health diagnoses are more likely to receive higher doses of opiate medication than Veterans without mental health diagnoses (Edlund et al., 2014; Seal et al., 2012). Given the health costs of prolonged opiate use for CNCP, including cognitive deficits, depression, higher accident risk, and death (Baldacchino, Balfour, Passetti, Humphris, & Matthews, 2012), there is a pressing need for research about non-pharmacological treatment options. The present study examined the feasibility and preliminary effectiveness of a six-week Cognitive Behavioral Therapy for Chronic Pain (CBT-CP) group treatment adapted for Veterans and implemented in a VA primary care setting. We studied 403 Veterans (86% male, 83% Caucasian) referred to CBT-CP over a 2.5 year period. Patient characteristics and opiate prescriptions (measured in morphine milligram equivalent [MME]) were compared between those who were referred and attended treatment (n=179) versus those referred but who did not attend (n=220). Chart history of mental health diagnoses revealed 63.1% of the sample had a history of depression; 39.8% traumatic stress symptoms; 35.0% anxiety symptoms; and 24.1% insomnia. There were no significant differences in prevalence of mental health diagnoses between Veterans who did versus did not attend treatment once referred. There also were no differences between those who did versus did not attend treatment and initial overall MME prescription amounts. We categorized Veterans as low (0-20 MME; n=251, 62.6%), moderate (21-50 MME; n=76, 19.0%), high (51-90 MME; n=39, 9.7%), and very high (91+ MME; n=35, 8.7%) in initial MME prescription amounts. Among the low MME group, those who and attended the intervention showed a significant decrease in opioid use 12 months post-referral ($M=-2.90, SD= 6.47$) compared to those who did not attend ($M=.14, SD=11.79$), $t(220)=2.53, p < .05$. There were no differences in the other three groups. These preliminary results suggest CBT-CP may promote decreases in opioid prescriptions in those with lower levels of initial use. Findings support the use of a stepped model of integrative care for pain management that considers levels of opioid prescriptions in Veterans.

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MULTIPLE HEALTH BEHAVIOR CHANGE INTERVENTION TARGETING PHYSICAL ACTIVITY AND DIET IMPROVES STRESS, NOT SLEEP

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Physical inactivity, unhealthy diet, chronic elevated stress, and poor sleep quality are prevalent lifestyle risk factors for chronic disease. Given that risk behaviors are interconnected and lifestyle risk factors often co-occur, research should examine whether multiple behavior change interventions targeting one or more of these domains may also impact adjacent domains. We examined whether interventions targeting physical activity (PA), sedentary behavior, and diet also improved stress and sleep, and whether these improvements were comparable to an intervention targeting stress and sleep directly. Participants (n=212) were Chicago area adults (76.4% female, 59% non-white minority, mean age = 40.8 years) with low PA, high sedentary time, and poor quality diet who took part in the Make Better Choices 2 (MBC2) trial between 2012-2014. MBC2 aimed to improve diet and PA through a multicomponent intervention incorporating telephone-based health coaching, monetary incentives, and self-monitoring in a custom smartphone application. We randomly assigned participants to one of three conditions: 1) targeting PA simultaneously with other diet and activity goals, 2) targeting PA sequentially after mastering other goals, or 3) a stress management control group targeting stress, sleep, and relaxation. At baseline, 3, 6, and 9 months, participants completed daily smartphone surveys evaluating all study domains for 7 days. Participants rated perceived stress on an 11-point scale ranging from 0 (no stress) to 10 (high stress). We computed a sleep health composite score by norming three sleep domains (duration, quality, and efficiency) onto a Z-score metric and taking the mean of normed domain scores at each daily evaluation. Mixed growth models demonstrated that all three conditions produced comparable ($\chi^2[2] = 0.87, p = .65$) reductions in stress across the trial (mean reduction in predicted values = 1.81). Models evaluating composite sleep health demonstrated greater improvements in the stress and sleep condition relative to the diet and PA conditions ($\chi^2[2] = 18.58, p < .001$). These findings suggest a behavior change intervention to improve diet and physical activity can cause collateral improvements in stress but not sleep. Research should evaluate how sleep can be efficiently targeted in multiple health behavior change interventions.

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SELF-DETERMINATION THEORY INTERVENTIONS IN THE HEALTH DOMAIN: A META-ANALYSIS

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Ng et al. (2012) meta-analysis of applications of self-determination theory (SDT; Ryan & Deci, 2017) in the health domain included many non-experimental studies. A more recent meta-analysis by Gillison et al. (2019) of intervention studies in this area did not calculate changes in indices of physical or mental health. Advancing the SDT literature in the health domain, we present a meta-analysis of experimental studies that tested changes in at least one SDT variable and at least one health-behavior, physical-health outcome, or psychological-health outcome.

73 studies (N=30,088) met our inclusion criteria and provided sufficient data for the purposes of the review. The behaviour change techniques (BCTs) and SDT-based need supportive techniques used in the studies were also coded. Risk of bias was assessed using an adapted version of the Cochrane Risk of Bias Tool. To test whether changes in SDT-related constructs engender changes in other SDT-related constructs, health behavior, physical health and psychological health, a set of meta-regressions were conducted. Sensitivity analyses were applied to examine the robustness of the synthesized results by removing outliers and by examining whether any of the BCTs were associated with the effect sizes from individual studies.

A random-effects meta-analytic model (using Stata, v. 15) showed that the interventions produced small-to-medium changes in most SDT constructs at the end of the intervention period, and in health behaviors at the end of the intervention period and at the follow-up. Small positive changes in physical and psychological health outcomes were also observed at the end of the interventions. Increases in need support and autonomous motivation (but not controlled motivation or amotivation) were associated with positive changes in health behavior.

Interventions in the health domain based on SDT produce modest (in the region of $g = .30$ to $.60$) but sustained increases in health behaviors and improvements in physical health, and short-term changes in psychological health. These effects are partly due to increases in self-endorsed motivation for change and support from social agents.

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SUSTAINABILITY OF MHEALTH MEDICATION REGIMEN SELF-MANAGEMENT PROGRAM FOR KIDNEY TRANSPLANT RECIPIENTS

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Background: Despite advances in medical care of kidney transplant recipients (KTRs), three-year graft survival is ~81% and graft half-life ~9yrs. Medication nonadherence and uncontrolled hypertension (HTN) are two primary risk factors for graft damage, loss, and death. A patient/provider user centered, theory guided, iterative design resulted in an mHealth technology enabled solution providing real-time monitoring of medication adherence (MA) and blood pressure (BP), and timely patient provider communication including, reinforcement/motivational SMS feedback to patients and quicker med changes by providers. Objective of the study was to determine the Smartphone MA Saves Kidneys: SMASK program's effects on MA and BP in KTRs with uncontrolled HTN.

Methods: The research design was a 6-month, two-arm efficacy trial followed by a 6-month follow-up evaluation. The SMASK experimental arm utilized an electronic medication tray, Bluetooth enabled, BP monitor and the SMASK app to monitor home-based adherence to their regimen, receive reminder alerts and tailored social reinforcement/motivational SMS based upon levels of adherence. The attention control standard care (SC) arm received text messages including links to PDFs and brief video clips containing healthy lifestyle tips.

Results: Participants were 80 adult KTRs (mean age: 54.2 yrs) with verified MNA and uncontrolled HTN. They were randomly assigned to either SMASK (n=40) or SC (n= 40) arms. At baseline, no participants had controlled systolic BP (SBP). MA scores during a 1-month screening phase were not different (53.9 vs. 47.3%; p=0.16) nor did SBP baseline values differ (141.4 and 144.8 mmHg, p =.16) between SC and SMASK groups, respectively. Average MA, as indicated by timestamped pill compartment use, was significantly higher (all p's < 0.001) for SMASK arm at each evaluation across the active 6-month trial (M1: 85.9 vs 45.3, M3: 97.5 vs. 38.5, and M6: 97.5 vs. 48.0% for SMASK and SC groups, respectively. At the 1, 3, 6 and 12- month time points, SBP averages were significantly lower in SMASK versus SC arms, respectively (M1: 130.9 vs 140.9; M3: 127.4 vs 139.3, M6: 124.3 vs 140.6, M12:128.3 vs 139.3; all p-values < .01). At months 3, 6, and 12 there were significant differences between the % meeting KDIGO cutoffs for SBP control (M3: 84.0 vs 37.5, M6: 75.8 vs 31.6 and M12: 58.6 vs 34.3%, all p's< .01) for SMASK and SC groups, respectively.

Conclusion: Our findings indicate the smartphone enabled medical regimen program is efficacious and sustainable after cessation of the formal program. A multi-site effectiveness RCT with longer follow-up and booster sessions post trial is needed to determine whether MA and BP control are maintained and improvements are gleaned in clinical outcomes (e.g., reduced rejection episodes, graft loss, improved GFRs, TAC variability).

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PATTERNS OF EARLY ADHERENCE TO PHYSICAL ACTIVITY GOALS IN BEHAVIORAL WEIGHT CONTROL

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Introduction: Weight loss response and adherence to behavioral recommendations, particularly physical activity (PA), vary substantially across individuals in lifestyle programs. While weight loss in the initial 4-8 weeks is shown to predict future weight loss, it is unclear what distinguishes responders from non-responders. Detecting early response indicators, such as poor adherence to PA, may provide targets for treatment tailoring. This study characterized patterns of adherence to prescribed step- and minutes-based PA goals during the first 8 weeks of an online group behavioral weight control program and identified associations with early weight loss.

Methods: Patterns of adherence to weekly goals for steps and minutes of moderate-to-vigorous physical activity (MVPA) were examined using latent class analysis. For each week, participants were considered adherent if the goal was met ($\geq 100\%$) or nonadherent if the goal was unmet ($< 100\%$) from self-reported PA. Step and minute goals were considered separately. Body weight was objectively measured at baseline and 8 weeks. Attendance, self-monitoring, and meeting calories goals were measured daily/weekly.

Results: PA goal adherence among participants (N=212; 91.5% female, 31.6% racial minority, M age of 47.9 years, M BMI of 35.8 kg/m²) revealed three unique subgroups: 27.3% had a high probability of consistently meeting both weekly PA goals (Adherent class), 28.4% were estimated to meet the MVPA goal until it progressed to 150 minutes while never meeting the step goal (Partially Adherent class), and the majority (44.3%) had the lowest probability of meeting either goal at any time (Nonadherent class). Adherent individuals had significantly greater weight loss at 8 weeks (estimated weight loss M [95% CI]: -5.5% [-4.5, -6.4]) compared to Partially Adherent (-3.4% [-2.8, -4.0]) and Nonadherent (-1.6% [-1.0, -2.1]). The Nonadherent class was least likely to attend group sessions, self-monitor their weight, dietary intake, or PA, or meet their calorie goal. The Partially Adherent class self-monitored significantly less than the Adherent class but was similar in attendance and meeting calorie goals.

Conclusions: Distinct patterns of adherence to weekly PA goals are associated with early response to weight loss and overall engagement, suggesting potential targets for optimizing adaptive interventions. Future research should investigate whether these early behavioral trajectories are predictive of long-term outcomes.

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THE ADDITION OF FINANCIAL INCENTIVES TO AN ONLINE GROUP-BASED BEHAVIORAL WEIGHT CONTROL PROGRAM: A RANDOMIZED CONTROLLED TRIAL

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Internet-delivered behavioral weight control is promising for expanding the reach and availability of weight management, but online programs produce lower weight losses than are typically achieved in-person. Financial incentives have been shown to increase weight losses but have not been examined in a synchronous online program. The current study examined whether adding financial incentives for both self-monitoring (process incentives) and achieving target weight losses (outcome incentives) increases weight losses achieved in a fully online, group-based behavioral weight management program compared with the same program without incentives. Adults with overweight and obesity (N=418; 91% female; 28% minority) recruited from 2 clinical centers were randomized to either a 24-session online group-based behavioral weight control program with weekly synchronous chat sessions (Internet-only) or the same program with weekly financial incentives for daily body weight and dietary self-monitoring and for achieving target weight losses at 2- and 6-months (Internet+Incentives). Primary outcomes included weight loss at 6 months and treatment engagement (attendance, self-monitoring of body weight, dietary intake, physical activity). Participants randomized to Internet+Incentives lost more weight (-6.1 + 5.5 kg) than those in Internet-only (-4.3 + 6.2 kg; $p < .01$). Further, a higher proportion of the Internet+Incentives group achieved $\geq 5\%$ weight loss (55%) compared with those in the Internet-only group (40%; $p < .05$). Treatment engagement was higher in the Internet+Incentives condition, with greater self-monitoring of behaviors targeted by incentives as well as higher rates of self-monitoring of behaviors not targeted (i.e., a spillover effect) and higher self-reported physical activity. Study retention was also higher among those in the Internet+Incentives condition (91%) than those in the Internet-only condition (81%; $p = .003$). Thus, it appears that adding financial incentives to a behavioral program delivered fully online can achieve higher weight losses than the online program alone; indeed, the weight losses approach those achieved by in-person weight control programs, offering potential for effective weight management with substantial geographic reach because the program is delivered without in-person contact.

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MINDFULNESS-BASED APPROACHES REDUCE HEALTH DISPARITIES BY IMPROVING WEIGHT LOSS MAINTENANCE AMONG RACIAL/ETHNIC MINORITIES

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Racial/ethnic minorities have a higher prevalence of obesity compared to non-Hispanic Whites and are underrepresented in research on weight loss interventions. Furthermore, existing studies indicate less initial weight loss and greater likelihood of weight regain among racial/ethnic minorities compared with non-Hispanic Whites. We examined whether mindfulness-based approaches can reduce racial/ethnic disparities in weight loss interventions. We analyzed data from a randomized clinical trial comparing 5.5-month diet/exercise weight loss interventions with or without mindfulness meditation and mindful eating training among 194 adults with obesity (82% female; 41% racial/ethnic minorities; and 36% without a college degree). Weight was measured at 3 month intervals. We assessed racial/ethnic differences in initial weight loss and weight loss maintenance using a linear mixed effects model including a linear spline of time with a single knot at 6 months, allowing the slope of weight change to differ from the period of active intervention (0-6 months) to the subsequent maintenance phase (6-18 months), adjusting for baseline body mass index and education level. During the initial intervention period of 0-6 months, non-Hispanic Whites in the mindfulness arm lost significantly more weight than all other groups, (0.37 more kg/month compared to Whites in the control arm, $p = .02$; and .42 kg/month compared to racial/ethnic minorities in the mindfulness arm, $p = .02$). During the one-year maintenance phase from 6-18 months, we found a significant interaction of intervention arm, race/ethnicity, and time (a joint chi-square test of all paired comparisons of slopes of weight change for each category of intervention arm and race/ethnicity was $p = .03$). In the active control arm, racial/ethnic minorities regained more weight per month during maintenance compared to Whites (0.34 kg/month; $p = 0.004$). However, in the mindfulness arm, minorities and Whites had similar rates of weight regain (0.05 kg/month difference; $p = .68$). Furthermore, minorities in the mindfulness arm tended to maintain greater weight loss compared to minorities in the control group (-0.23 kg/month, $p = .07$). For Whites, there was no significant difference in weight loss maintenance between those in the mindfulness vs control groups (0.06 kg/month; $p = .58$). Of note, Whites lost more weight compared to racial/ethnic minorities across both intervention arms at 18 months (-5.54 vs -2.09 kg, $p = .006$). The integration of mindfulness meditation and mindful eating training into diet/exercise weight loss programs may improve weight loss maintenance among racial/ethnic minorities compared to standard of care diet/exercise weight loss interventions. Optimizing mindfulness interventions to address disparities in absolute weight loss and weight regain deserves further research.

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RURAL-URBAN WEIGHT-LOSS OUTCOMES FOLLOWING BARIATRIC SURGERY

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Introduction: Bariatric surgery is an effective treatment for obesity. Although obesity disproportionately affects rural populations, there is limited data on whether surgical outcomes differ between rural/urban residents. The present study aims to describe characteristics of and explore potential differences in postoperative weight loss outcomes in patients who completed bariatric surgery residing in rural vs. urban areas.

Methods: The study included 170 patients who underwent Roux-en-Y gastric bypass or vertical sleeve gastrectomy from rural (n=52) and urban (n=118) counties. Retrospective chart review was used to collect data on age, race, gender, insurance status, surgery type, preoperative height and weight, and 3- and 6-month postoperative weights. Patients' county of residence was coded as "rural" or "urban" using the US Census Bureau's classification of counties. Weight outcomes included change in BMI (Δ BMI), percent excess BMI lost (%EBMIL), and percent total weight loss (%TWL). Chi-square and t-tests were used to investigate group differences in demographic characteristics, and t-tests were used to investigate differences in 3- and 6-month post-operative weights.

Results: Compared to urban patients, patients from rural counties had lower pre-operative BMIs, were more likely to identify as either White or Hispanic/Latino, and were more likely to undergo sleeve gastrectomy vs. Roux-en-Y procedures, all $ps < .05$. Across all participants, average ($M \pm SE$) Δ BMI was 7.8 ± 0.2 at month 3 and 10.7 ± 0.3 at month 6. %EBMIL was $37.5\% \pm 1.0\%$ at month 3 and $50.9\% \pm 1.4\%$ at month 6, and %TWL was $16.5\% \pm 0.3$ at month 3 and $22.5\% \pm 0.6$ at month 6. At month 3, patients from rural areas demonstrated larger weight losses (across Δ BMI, %EBMIL, and %TWL) patients from urban counties, all $ps < .05$; however, there was no significant difference in 6-month weight outcomes on any of the weight outcome measures, all $ps > .05$.

Discussion: Results demonstrated some demographic differences between urban and rural patients undergoing bariatric surgery. While rural patients demonstrated greater weight losses at 3-month follow-up appointments, there was no difference observed between groups at 6-month visits. Taken together, results demonstrate that, when provided access and opportunity to pursue surgical weight-loss treatment, patients from rural counties have potential to realize weight loss outcomes comparable to those of their urban counterparts.

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D276

10:30 AM-11:30 AM

THE FOOD EMBARRASSMENT QUESTIONNAIRE INITIAL CONCEPTUAL DEVELOPMENT AND FACTOR ANALYSIS

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The current study reports on the initial development of the Food Embarrassment Questionnaire (FEQ)—an instrument for assessing embarrassment and hindrance in the healthy eating behaviors of people who are attempting to lose weight. Obesity is a commonly stigmatized health condition with well-studied negative psychological and social consequences for individuals including being the targets of blame, shame, and embarrassment (Tomiya, 2014). For example, a common component of eating disorders involves shame and resulting secrecy (Bennett & Dodge, 2007). Other research has examined embarrassment in the context of purchasing behavior. One study found that purchases of unhealthy snacks were higher at grocery self-checkouts (Olden, 2018). In sum, surprisingly little is known about the impact of these types of experiences on the eating behaviors of individuals attempting to lose weight. And no reliable and valid instrument exists to measure the magnitude of such experiences.

The intended purpose of the FEQ is to measure the degree to which people feel embarrassed and hindered when purchasing or consuming both "diet" and "unhealthy" food in a variety of contexts (e.g., at restaurants, grocery stores, and social settings). Twenty questionnaire items (e.g., *I'd rather not eat healthy "diet" foods that my family members might notice*) were created with input from various health professionals experienced in behavioral weight loss treatment and piloted with a sample of 40 weight loss participants. Principal components analysis suggests a coherent and statistically strong two-factor structure. The KMO measure of sampling adequacy was .69, indicating sufficiently large effect sizes for associations between scale items (Kaiser, 1974). Also, Bartlett's test of sphericity was significant ($\chi^2(190) 565.46, p < .001$), confirming that the correlation matrix for the items is not an identity matrix. All communalities were above .30, indicating a shared common variance between each item (Gorsuch, 1997). Analysis of the eigenvalues for this initial iteration of the FEQ indicated that two factors had values of 6.99 and 3.99 and they explained 34.98% and 19.93% of the variance, whereas all other components had eigenvalues of approximately 1.00 and explained less than 4% of the variance on average.

Next steps in the development of the Food Embarrassment Questionnaire include determining divergent, convergent, and criterion validity in a larger sample of adults attempting to lose weight. For example, convergent validity would be supported by confirming that scores on the FEQ are associated with measures of disordered eating and inversely with measures of eating self-efficacy. It will also be important to determine whether scores on the FEQ predict difficulty in weight loss.

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D277

10:30 AM-11:30 AM

ASSOCIATIONS BETWEEN IMPULSIVITY, IMPLICIT FOOD ATTITUDES, AND BEHAVIORAL WEIGHT MANAGEMENT PROGRAM OUTCOMES

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Background: An interaction between behavioral impulsivity and food-related implicit attitudes has been shown to predict weight gain in normal weight adults, such that individuals with lower response inhibition and greater implicit preference for snack foods may be at highest risk for weight gain. To date, no studies have investigated this interaction in the context of weight loss. To fill this gap, the current study investigated associations between response inhibition and implicit food preferences and both caloric intake and weight change during a behavioral weight loss program.

Methods: Participants were 74 adults with overweight/obesity (mean±SD, age = 50.7±10.4 years, BMI = 31.2±4.4 kg/m², 84% White, 69% Female) who took part in a 12-week Internet-based behavioral weight loss program. At baseline, participants used a study computer to complete a Go/No-Go (GNG) response inhibition task and a food-related Implicit Association Test (IAT) that assessed implicit attitudes towards calorie dense (e.g., cheese pizza, chocolate cake, ice cream) vs. healthier foods (e.g., fresh fruit, green beans, baby carrots). Participants were asked to report daily caloric intake on a study website throughout the intervention, and weight was assessed at baseline and Month 3. Multilevel models were used to assess associations between baseline GNG, IAT, and caloric intake during the intervention, and regression models were used to assess associations between baseline GNG, IAT, and weight change.

Results: Participants lost an average (mean±SD) of 5.8±4.9 kg during the intervention. There were no associations between baseline GNG and IAT and caloric intake during the intervention, and no significant interaction between GNG and IAT, all *ps* >.05. There were also no associations between baseline GNG and IAT scores and weight at baseline or weight change over the course of the intervention, all *ps* >.05. Contrary to hypotheses, there was also not a significant interaction between GNG and IAT for either initial weight or weight change over time, *ps* >.05.

Conclusion: Results demonstrated no significant associations between response inhibition, implicit food preferences, and either caloric intake or weight loss during a behavioral weight management program. Future studies should replicate the previous study conducted in normal weight adults, and investigate the potential mechanisms by which response inhibition or implicit food preferences may impact eating behavior and weight change over time.

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D278

10:30 AM-11:30 AM

ASSOCIATION BETWEEN DISCRIMINATION AND WEIGHT LOSS OUTCOMES AMONG NON-HISPANIC BLACK EMERGING ADULT WOMEN

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Background: Over half of non-Hispanic Black (NHB) emerging adult (EA) women meet criteria for overweight or obesity, yet they fare the worst in behavioral weight loss (BWL) trials. Further, tremendous variability in treatment response has been observed among NHB EA women, but little is known about the drivers of this variability, making it difficult to optimize treatment programs for this vulnerable population. Discrimination—perhaps due to the intersection of race, gender and body size—might be a unique stressor that contributes to poorer outcomes for some NHB EA women. Thus, the goal of the present study was to examine the relationship between discrimination and BWL treatment outcomes among NHB EA women.

Methods: Data were drawn from a randomized controlled trial targeting EA; for the purposes of this ancillary study, we extracted data for two waves of participants, limiting analyses to NHB women. Participants (N=52; ages 18-25; BMI=34.2 + 4.2kg/m²) all received a 6-month technology mediated program. At baseline (BL), discrimination was assessed using the everyday discrimination scale (EDS) short version. Similar to other studies, total scores were used to classify into groups: never (<=5), low (6-12), medium to high (13-20+). Physical outcomes (blood pressure (BP), weight, and waist circumference) were taken at 0 and 3 months. ANOVA was used to determine whether baseline physical measures varied by EDS category, and ANCOVA was used to examine treatment outcomes, controlling for arm.

Results: At BL, 76.9% of NHB women reported experiencing discrimination; the most common attributions for the discrimination were race (62.5%), gender (12.5%), ancestry / national origin, education or income, and other (all 6.3%), and other aspects of their physical appearance and religion (each 3.1%). At BL, SBP differed by EDS group [never vs. low (105 vs. 113, *p*=.009); never vs. medium/high (105 vs. 113, *p*=.03)] but no other differences were observed. EDS did not predict change in weight (*p*=.37), waist (*p*=.83), systolic BP (*p*=.40) or diastolic BP (*p*=.63) at 3 months.

Conclusion: Experiences of discrimination were associated with higher systolic BP, but were not associated with changes in BP or adiposity at 3 months. More research is needed to determine the long-term impact of discrimination on treatment outcomes in this vulnerable population, and to identify potential protective factors which could be targeted in future interventions to improve cardiovascular health.

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D279

10:30 AM–11:30 AM

EFFICACY OF A BRIEF SELF-COMPASSION INTERVENTION FOR REDUCING INTERNALIZED WEIGHT BIAS AND ASSOCIATED OUTCOMES

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Introduction: Internalization of weight bias (IWB) occurs when one believes negative weight-related stereotypes to be true of themselves. IWB is strongly associated with a range of negative consequences, such as maladaptive eating patterns (e.g., binge eating), body image concerns, and greater psychopathology, above and beyond other risk factors such as BMI (Durso & Latner, 2008). While effective and accessible interventions for reducing IWB are limited, self-compassion represents a valuable psychological resource that may help reduce IWB and associated consequences (Tylka et al., 2014). Therefore, the purpose of this study is to examine the impacts of a brief, 3-session self-compassion intervention for women who are overweight/obese with IWB.

Method: A single group, within-participant, pre-post design was used. The sample consisted of female university students and faculty/staff with BMIs of 25+ and moderate-high IWB ($N = 13$); 69% Caucasian, aged 18–59 years old ($M = 34.7$). Surveys assessed self-compassion (Self-Compassion Scale-Short Form), IWB (Weight Bias Internalization Scale), body appreciation (Body Appreciation Scale 2), body image shame (Body Image Shame Scale), intuitive eating (Intuitive Eating Scale 2), uncontrolled and emotional eating (Three Factor Eating Questionnaire), and psychological symptomology (Depression Anxiety Stress Scales-21). A modified version of Smeets and colleagues' (2014) 3-session self-compassion intervention was implemented. The intervention consisted of discussion, introduction to self-compassion practices, and assigned application of skills between sessions.

Results: Intuitive eating significantly increased pre- to post-intervention, $t(12) = 3.65, p = .003$ ($M_{pre} = 2.75, M_{post} = 2.99$, Cohen's $D = 1.02$), as did body appreciation, $t(12) = 2.88, p = .014$ ($M_{pre} = 2.55, M_{post} = 2.87, D = .80$). While not statistically significant, small to moderate changes were observed for other variables in the expected direction: self-compassion increased ($D = .28$), uncontrolled eating decreased ($D = .49$), and emotional eating decreased ($D = .46$). Further, 100% of participants said they would recommend the program.

Conclusions: Findings from this pilot intervention study demonstrated women with overweight/obesity and IWB showed increases in self-compassion, body appreciation, and intuitive eating after participation in a brief self-compassion intervention. Results suggest that self-compassion practices may hold promise for improving body image and eating behavior in this population. Future studies with active control designs and larger sample sizes are warranted.

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D280

10:30 AM–11:30 AM

ASSOCIATIONS BETWEEN SELF-REGULATION AND ATTENDANCE: TOWARDS IMPROVING OUTCOMES FOR WEIGHT LOSS TREATMENTS

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Although outcomes from behavioral weight loss treatments (BWLts) are highly variable, one consistent finding is the association between participant attendance and below-average weight loss (WL). Although a large body of research has examined predictors of attrition from BWLT, few studies have identified predictors of attendance in BWLT. One construct which is understudied but plausibly related to attendance is self-regulation, as deficits in this capacity are thought to impede long-term goal-directed behavior (e.g., participation in treatment). To test this potential relationship, the present study analyzed whether executive functioning (EF; i.e., the cognitive capacities such as planning and emotional control which underlie behavioral regulation) and impulsivity (i.e., the tendency to act rashly without forethought for future consequences)—two central domains of self-regulation—predict attendance in a BWLT program.

This study represents secondary data analysis from a randomized trial comparing standard and acceptance-based BWLTs (Forman et al., 2016, 2019). Participants with overweight and obesity ($n=190$), with a mean age of 51.61 ± 9.97 years and initial BMI of $36.50 \pm 5.41 \text{ kg/m}^2$, participated in the 25-session manualized trial. Treatment occurred over the course of 50 weeks, and self-report measures of impulsivity (UPPS) and executive functioning (BRIEF-A) were administered at baseline.

Regressions controlling for baseline participant age and weight demonstrated a significant association between baseline scores on the UPPS (Lack of) Perseverance subscale and total session attendance ($\beta = -.022, p = 0.03$). Other UPPS subscales, BRIEF-A subscales, and BRIEF-A composite scales demonstrated non-significant associations with attendance (β s = -0.15 to $0.16, ps = 0.11$ to 0.97).

This study presents evidence that a low ability to persist in boring or difficult projects is predictive of low attendance in a BWLT. Consistent with previous research showing superior predictive validity of objective EF measures, these results also further call into question the legitimacy of self-report measures of EF. Future research may benefit from using these findings to inform BWLT design so that high-likelihood dropouts are identified and individually treated.

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D281

10:30 AM-11:30 AM

EXECUTIVE FUNCTIONING AND FOODS IN THE HOME BEFORE AND DURING AN ONLINE BEHAVIORAL WEIGHT-LOSS PROGRAM.

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Executive functioning (EF) has been linked to obesity and weight loss (WL). In behavioral interventions, targeting EF with behavioral strategies (e.g., action planning) has resulted in improvements in eating choices (e.g. reducing snacking). Behavioral WL programs also target foods in the home (FH), as FH are associated with one's diet. No one has yet examined how EF relates to FH in a WL intervention. This study examined EF, FH, and WL outcomes in an online behavioral WL program. It was hypothesized that: 1) higher baseline EF would be associated with more fruits and vegetables and fewer high-fat FH; 2) Higher baseline EF and an improvement in EF would predict an increase in fruits and vegetables and a decrease in high-fat FH; 3) Healthy changes in FH and improvement in EF would predict greater WL.

248 adults (34% minority; 22% male; BMI 35.1 +/- 5.7) enrolled in a 2-phase trial consisting of a 4-month online WL program and an 18-month maintenance phase for those who lost at least 5% of their initial body weight. Participants completed the adult Behavior Rating Inventory of Executive Function (BRIEF-A), a household food inventory, and an objective measurement of weight at baseline. The 4-month online program, based on the Diabetes Prevention Program, included calorie and exercise goals, self-monitoring, and weekly lessons and feedback. After 4-months, participants (n=122) eligible for the maintenance trial repeated baseline measures. The current study used BRIEF subscales Inhibit and Plan/Organize.

At baseline, controlling for demographic variables, poorer inhibition was related to fewer fruits and vegetables in the home ($p < .02$); no relationship was found between high-fat foods and BRIEF-A scores. At 4-months, improvements in Plan/Organize was associated with an increase of fruits and vegetables in the home ($p < .05$). Contrary to our hypothesis, better inhibition at baseline and greater improvement in inhibition at 4-months was associated with an increase in high-fat FH post-treatment ($p < .02$). Controlling for demographic variables and baseline BMI, neither BRIEF-A scores nor FH (at baseline or post-treatment) were predictive of WL.

Overall, results support a link between EF, food environment, and one's ability to change that environment. The finding that high-fat FH increase with greater improvement in inhibition and better baseline inhibition may reflect that those with better inhibition may not feel the need to decrease tempting FH to decrease caloric intake. The result that neither BRIEF-A scores nor FH predicted WL highlights that WL is influenced by many more factors than FH (e.g. exercise, portion control). Given the mixed findings and limitations of this study (i.e. self-report EF and decreased sample size at end of treatment), further research on EF and home environment in behavioral interventions can clarify the role of these factors to guide development of targeted interventions.

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D282

10:30 AM-11:30 AM

A HUMAN CENTERED DESIGN APPROACH TO BARIATRIC SURGERY PREPARATION & SUPPORT AT KAISER PERMANENTE

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Bariatric surgery is a powerful tool with the potential to improve long-term health status, improve quality of life, and even reverse chronic disease. Often, the majority of research and attention is focused on the surgery itself with limited emphasis on the actual lifestyle factors that have profound influence over surgery outcomes.

As one of the largest bariatric surgery providers worldwide with over 40,000 surgeries completed, Kaiser Permanente's Southern California (KP Scal) region has long been committed to supporting the health of its members undergoing bariatric surgery. In 2018, KP Scal's Center for Healthy Living began to reimagine and redesign the bariatric surgery experience for its members. Guided by the principles of human centered design, KP Scal engaged with over 100 bariatric surgery candidates and post-op members to design a new framework for the bariatric surgery education experience that puts members need at the core.

By using human centered design to design WITH bariatric members and not simply FOR them, KP Scal has created a new framework for how it prepares and supports its bariatric members, which includes a trauma-informed approach with four components: 1.) pre-surgery skill building program, 2.) post-surgery long-term engagement program, 3.) comprehensive member-centric website, and 4.) wellness coaching program.

This presentation will share key insights and findings from focus groups, interviews, and codesign sessions with over 100 pre and post-op members; highlight the framework of KP Scal's new approach to bariatric surgery education, and long-term support; and highlight an innovative approach using human-centered design to truly put patient needs at the core of all solutions.

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D283

10:30 AM–11:30 AM

ECONOMIC POSITION AND REINFORCEMENT PATHOLOGY: AN ANALYSIS OF ADOLESCENTS

Amanda Crandall, MS¹, Amanda Ziegler, BSN, BS, MPH¹, Tegan Mansouri, RD MS¹, Emily Isenhardt, n/a¹, Jalen Matteson, n/a¹, Autum Carter, n/a¹, Katherine N. Balantekin, PhD, RD¹, Jennifer Temple, PhD¹

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Objective: Poverty and obesity are strongly and inversely associated in the United States. Emerging evidence suggests that living under conditions of economic disadvantage may increase one's risk for reinforcement pathology, which is state of having high reinforcing value (RRV) of food and high delay discounting (DD). We sought to examine the relationships among multiple measures of household economic position, RRV of food, DD, and body mass index (zBMI) in adolescents.

Methods: These data were collected as part of ongoing longitudinal study of risk factors for obesity in 244 adolescents. Participants and one parent had height and weight measured, filled out surveys, and completed an adjusting amount DD task. RRV was measured using a computer task that measures mouse clicks for food or an alternative activity on a progressive ratio schedule. Analyses consisted of correlations among measures of economic position (i.e. income, socioeconomic status (SES), and food insecurity) and RRV, DD, and BMI z-scores. In the case of significant associations, multiple regression models were created with theoretically informed covariates.

Results: As expected, household income, SES, and food insecurity were related to one another (all $p < .05$). Household income was the only measure of economic position associated with RRV ($r(224) = -0.16$, $p < .05$). This relationship remained significant after controlling for participant hunger, food liking, dietary restraint, and RRV of the alternative activity ($\beta = -4.87e-6$, $p < .05$). SES was associated with DD ($r(230) = -0.13$, $p < .05$), and this remained significant after controlling for adolescent age and sex ($\beta = -0.06$, $p < .05$). Finally, adolescent zBMI was positively associated with household food insecurity ($r(230)=0.13$, $p < .05$). This relationship remained significant after controlling for age, sex, dietary restraint, and sensitization score ($\beta = 0.09$, $p < .01$).

Conclusion: Our results suggest that household income, SES, and food insecurity are interrelated, but separate constructs, that may exert differential effects on behavior and obesity risk. When low income and low SES occur together, there may be an increased risk of reinforcement pathology. Further, in the most severe cases, those with food insecurity, the adolescents had higher zBMIs. Future research should replicate and confirm the effects of low income and low SES on reinforcement pathology by examining them in an experimental context.

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D284

10:30 AM–11:30 AM

ADHERENCE TO SIMPLIFIED DIETARY “RED FOOD” MONITORING AMONG YOUNG ADULTS USING A MOBILE-BASED BEHAVIORAL WEIGHT LOSS APP

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Background: Self-monitoring of diet is associated with weight loss success in behavioral weight control interventions for adults, but young adults, in particular, have poorer adherence to diet monitoring than older adults. The goal of this study was to examine adherence to a simplified form of dietary tracking in a mobile-delivered intervention for young adults and its association with immediate and long-term weight changes.

Methods: Data were drawn from the Nudge study, a 12-week micro-randomized trial that tested the effect of intervention messages delivered through a smartphone application on achievement of daily dietary, activity, and weighing goals. This sample includes 50 participants (out of N=52) with a follow-up weight measurement ($M_{age} = 29.4 \pm 3.8$ years; $M_{BMI} = 31.8 \pm 4.2$ kg/m², 80% female, 32% minority). Nudge used a simplified tracking approach in which participants tracked “red” foods (RF; high-calorie, high-fat foods) in the study smartphone app. Participants also weighed daily on a WiFi-enabled scale, used a Fitbit to track their physical activity, had a personalized daily RF limit and activity goal, received weekly personalized, automated feedback, and received messages in the app each day. Linear regression evaluated the association between complete RF tracking days and 12-week weight change, controlling for baseline weight. T-tests compared 12-week weight change between participants who tracked an average of 5+ days a week and those who did not. The effect of lapses in RF tracking on immediate weight changes was examined using a generalized estimating equation controlling for repeated measurements within individuals that evaluated the effect of lapse length (number of consecutive days without RF tracking) on concurrent weight change during the time of the lapse.

Results: Participants averaged 55.5 ± 22.9 complete RF tracking days (66% of 84 study days) and 62.1 ± 21.5 days with any tracking (74%). In Week 1, 92% of participants tracked 5+ complete days, compared to 42% in Week 12. Participants who tracked an average of 5+ complete days per week ($M = 6.1 \pm 1.4$ days/week; $n=26$) lost 4.7 kg (± 3.5) at 12 weeks compared to a loss of 0.4 kg (± 2.3) among those who tracked less often ($M = 3.0 \pm 0.7$ days/week; $n=24$; $p < .0001$). For every 1-day increase in RF tracking, weight loss increased by 0.10 kg ($p < .0001$). Lapses in RF tracking averaged 3.2 ± 6.7 days in length, and each 1-day increase in lapse length was associated with a weight gain of 0.44 kg (95%CI: 0.24, 0.64). All results were similar in analyses that also included partial RF tracking days.

Conclusion: The comparative effectiveness of red food tracking vs. traditional calorie monitoring is not yet known, but the results suggest a potentially viable alternative monitoring method. Future research should examine whether simplified monitoring can lead to increased adherence to dietary monitoring and weight loss.

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MERITORIOUS AWARD WINNER

D285

10:30 AM-11:30 AM

ACCEPTANCE-BASED BEHAVIORAL TREATMENTS FOR WEIGHT MANAGEMENT: A SYSTEMATIC REVIEW

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Background: Standard behavioral weight loss interventions (SBTs) have been shown to produce clinically significant weight losses of 8-10%; however, participants often regain weight following treatment. Novel treatment methods, such as acceptance-based behavioral treatment (ABT), have been suggested as a way to improve long-term outcomes. We conducted a systematic review to examine whether, compared to SBT, ABT interventions produced 1) greater initial weight losses and 2) improved weight loss maintenance.

Methods: A systematic review of the literature on ABT for weight management (using PubMed, Web of Science, and PsychINFO) was completed following PRISMA guidelines. Inclusion criteria included: 1) use of a comprehensive behavioral weight loss intervention with components based in acceptance and commitment therapy and 2) publication in a peer-reviewed journal. Exclusion criteria included: 1) use of medication or surgery to promote weight loss, 2) no report of weight change outcomes, and 3) secondary data analyses of a trial already included in the review.

Results: A total of 233 studies were identified. Following title, abstract, and full paper review, 6 articles, representing outcomes from 5 randomized controlled trials (RCTs) conducted by 3 research groups, met the eligibility criteria and were included. The Delphi list method suggested the included studies were of good quality (median 7 out of 9) with one study of lower quality. While 3 of the 5 trials found no significant difference between initial weight losses for ABT and SBT, one found greater weight loss for ABT and another found significant differences only when experts delivered ABT. Four studies included results on weight loss maintenance from 6-months after the end of initial intervention; 2 reported superior weight loss maintenance in ABT versus SBT and 2 did not. Additionally, 2 studies reported outcomes at 12 months with one finding significant differences between groups and the other finding no differences at 12 or 24 months.

Discussion: The current review found preliminary support for the effectiveness of ABT over SBT for initial weight loss and weight loss maintenance; however, additional research should be conducted to examine whether ABT can be disseminated into real-world settings and administered by clinicians not affiliated with the initial intervention design. Moreover, additional studies are needed to clarify active processes of ABT in order to improve treatment effectiveness.

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D286

10:30 AM-11:30 AM

COMPARING THE EFFECT OF HEALTH GOAL VS GENERAL FUTURE THINKING ON HEALTH BEHAVIORS AMONG CIGARETTE SMOKERS AND OBESE INDIVIDUALS

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Episodic Future Thinking (EFT; vividly imagining realistic future events) reduces delay discounting (DD; preference for smaller, immediate rewards) and various maladaptive behaviors. Exploring potential personalization of EFT to optimize its ability to alter DD and demand for unhealthy reinforcers is important for the development of interventions targeting long-term improvement and maintenance of health. In this investigation, using two separate studies, we examined the effects of EFT with and without a health goal on rates of discounting, demand, and craving for cigarettes and fast food among cigarette smokers and obese individuals, respectively. Using data collected from Amazon Mechanical Turk (MTurk; a crowdsourcing platform), Study 1 (N=189) examined the effect of EFT on DD and measures of cigarette demand and craving in cigarette smokers who were randomly assigned to one of three conditions: EFT-health goal, EFT-general, or EFT-general. Study 2 (N=255), using a 2x2 factorial design, examined the effects of health goals and general EFT on DD and measures of fast food demand and craving in obese individuals who were randomly assigned to one of four conditions: EFT-health goal, EFT-general, EFT-health goal or EFT-general. Health-goal EFT was not more effective than general EFT in reducing monetary discounting. However, the addition of a health goal to general EFT significantly increased its effect on intensity and elasticity of demand for cigarettes and fast food. These findings suggest that the amplification of future thinking through the inclusion of a health goal may promote healthy decisions and result in positive behavior changes.

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D287

10:30 AM-11:30 AM

CLARIFYING THE ROLE OF VALUES IN WEIGHT CONTROL:
A PILOT STUDY OF A VALUES-BASED INTERVENTION TO PROMOTE WEIGHT LOSSDiane H. Dallal, BA¹, Evan M. Forman, PhD¹¹Drexel University, Philadelphia, PA

Autonomous motivation is implicated in initiating and sustaining weight control efforts over time. Two acceptance-based strategies thought to enhance autonomous motivation are *values clarification* (identifying one's valued domains of life) and *values awareness* (enhancing salience of clarified values during decision-making). When clarification (VC) and awareness (VA) strategies are utilized, extrinsic factors that may motivate weight control efforts (e.g., social pressure, body dissatisfaction) are posited to be outweighed by newly salient, autonomous motivators for change (e.g., enhancing health, quality of life). However, minimal research has been conducted to evaluate these components in isolation. Namely, VC and VA have only been deployed within larger acceptance-based treatment packages (ABTs). Moreover, because measures of VC and VA have not previously been developed, no data are available to evaluate the constructs as mechanisms of action. As a result, their efficacy in treatment warrants further investigation.

The present study piloted a values-based intervention for weight control. Over 3 weeks, participants with overweight/obesity ($N=18$) received 3 sessions of an analog weight loss intervention, infused with techniques to clarify health-promoting values and elicit awareness of those values during dietary decision-making. Assessments were conducted at baseline and post-treatment (1 month). A newly developed measure by our team was used to evaluate whether the intervention could achieve target engagement of VC and VA.

Results revealed modest improvements in VC at trend-level ($M_d=.51$, $SD_d=1.11$, range: 0-3; $t(17)=1.96$, $p=.07$, $d=.46$) and large, statistically significant improvements in VA ($M_d=1.50$, $SD_d=1.38$, range: 0-4; $t(17)=4.61$, $p<.001$, $d=1.08$). Participants also experienced moderate, significant increases in values-congruent behaviors on the Valued Living Questionnaire ($M_d=14.58$, $SD_d=23.00$; $t(17)=2.69$, $p=.02$, $d=.63$). In addition, the sample exhibited an average weight loss of 1.3% ($SD=1.17$, $d=1.12$) over 3 weeks (consistent with 3-week weight losses in longer-term trials conducted by our team). Results suggest that the analog treatment was able to engage the targets of VC and VA, produce meaningful improvements in VA during dietary decision-making, and increase values-congruent behaviors consistent with weight control. Future work should evaluate whether a longer term, values-based weight loss program may drive effects on weight change over and above gold standard behavioral weight loss.

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POOR SLEEP QUALITY AS A RISK FACTOR FOR WEIGHT GAIN IN
FIRST YEAR COLLEGE STUDENTSHannah Peach, PhD¹, Christina Lambros, n/a¹, Conner Clarken, n/a¹, Katerina Lantz, n/a¹, Malaysia Wilcox, n/a¹¹University of North Carolina at Charlotte, Charlotte, NC

Introduction: College students – particularly first year students – experience a high risk for weight gain, sometimes referred to as the “freshman fifteen.” This raises a significant health concern, as obesity earlier in life tracks into later adulthood, contributing to nearly 40% of the U.S. adult population meeting criteria for obesity. While poor nutrition and physical inactivity are widely known risk factors for weight gain, sleep is slowly gaining recognition as an important predictor of obesity. Yet, the impact of sleep patterns on weight gain during college is understudied. A recent study found that sleep duration predicted weight gain among first year students (Ludy et al., 2018), but little research has examined if sleep quality also plays a role. Therefore, the present study predicted that sleep quality during the first semester of college would predict weight gain in first year students, above and beyond the influence of established risk factors.

Method: First year university students ($N=34$) completed a series of self-report questionnaires and a Dual-energy X-ray absorptiometry (DEXA) scan during their first semester (Time 1) and second semester (Time 2) of college. Sleep quality was measured using the Pittsburgh Sleep Quality Index. The DEXA scan generated reports of body composition, including lean and fat pounds. Weight gain was calculated as fat pounds at Time 1 subtracted from fat pounds at Time 2.

Results: On average, participants gained nearly 2 pounds of fat across their first year of college ($M=1.83$, $SD=5.17$, Range = $-8.20-14.77$). A hierarchical regression was analyzed, with age, gender, socioeconomic status, and Time 1 stress entered in Block 1, Time 1 eating habits and physical activity entered in Block 2, Time 2 sleep quality entered in Block 3, and Time 1 sleep quality entered in Block 4. After controlling for all covariates, Time 1 sleep quality significantly predicted fat pound weight gain ($\Delta R^2=.28$, $b=1.42$, $p<.001$).

Discussion: Sleep quality served as an independent risk factor for weight gain among first year college students. While the sample size in the present study was relatively small, findings yield strong, longitudinal associations with self-reported sleep quality and gold-standard measures of fat pound weight gain. Targeting sleep hygiene education and intervention programs among first semester college students may serve as an innovative approach to preventing weight gain during this transitional period.

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TEST-RETEST PERFORMANCE OF A BRIEF INTEGRATED QUANTITATIVE
SENSORY TESTING PROTOCOL IN HEALTHY ADULTSChristina E. Gilmour, n/a¹, Martin De Vita, MS², Katherine Buckheit, MS², Dezarie Moskal, MS², Stephen Maisto, PhD²¹Syracuse University, Mohegan Lake, NY; ²Syracuse University, Syracuse, NY

Quantitative sensory testing (QST) is a rapidly expanding domain of pain reactivity research that involves measuring psychophysiological responses to standardized experimental stimuli. QST has numerous clinical and research applications and is frequently used for assessing pain pathophysiology, analgesic effects of substances, and sensory function. Given the increasingly variable procedures employed by QST researchers, there is a recognized need for reliable brief QST assessments. Extant protocols are characterized by lengthy procedures and varying combinations of specialized equipment. By contrast, we integrated static and dynamic pain reactivity measures into a brief 20-minute QST protocol that uses a single thermal QST device. Test-retest performance was evaluated by administering the protocol among 33 healthy young adults on 2 occasions separated by exactly one week. Static measures of pain threshold (ICC = 0.80), tolerance (ICC = 0.81), and suprathreshold (ICC = 0.83) exhibited excellent reliability. Dynamic measures of conditioned pain modulation (ICC = 0.66), offset analgesia (ICC = 0.69), temporal summation (ICC = 0.71) scored using a ‘percent change’ method yielded optimal reliability in the good to excellent range. Alternative dynamic scoring methods demonstrated poorer reliability and/or agreement. Our findings indicated that this brief integrated QST protocol can reliably monitor human pain reactivity over brief periods.

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RACE AS MODERATOR OF THE RELATIONSHIP BETWEEN RESILIENCE AND PAIN-RELATED OUTCOMES AMONG OLDER ADULTS WITH LOW-BACK PAIN

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Background: Racial/ethnic disparities are well documented in clinical and experimental pain. Across studies, non-Hispanic blacks (NHBs) report greater pain intensity, pain interference, and poorer pain-related outcomes, including negative psychological functioning (i.e., depression, anxiety), compared to non-Hispanic whites (NHWs). While risk factors have been implicated in these disparities, little is known regarding how sources of resilience contribute to these differences, despite the growing body of research supporting the protective role of resilience in clinical pain and disability among adults with chronic pain. To address this gap, the current study sought to examine the association between psychological resilience and pain outcomes, and the moderating role of race across these relationships.

Methods: In this secondary data analysis, 60 adults over the age of 60 (NHWs=42, NHBs=18) with chronic low-back pain completed a battery of psychological and pain-specific questionnaires assessing pain resilience (Pain Resilience Scale), positive affect (Positive and Negative Affect Schedule), and PROMIS pain intensity and physical functioning. The Back Performance Scale was administered as a measure of back-related physical functioning and movement-evoked pain. Bivariate correlations assessed the association between each independent variable (race, pain resilience, positive affect) and pain symptoms, while the interaction of race and resilience was examined via linear regression.

Results: In bivariate analyses, race was a significant correlate of pain outcomes, with NHBs demonstrating greater pain intensity ($r=.42$, $p=.001$), poorer physical function ($r=-.32$, $p=.01$), and greater movement-evoked pain ($r=.28$, $p=.03$) than NHWs. There were no associations between measures of resilience with pain outcomes. Moderation analysis revealed that higher levels of positive affect were protective against movement-evoked pain ($b=-1.09$, $p=0.01$), while greater pain resilience was associated with lower pain intensity ($b=-0.06$, $p=0.03$), but only in NHWs.

Conclusion: These results bring attention to racial differences in how resilience factors influence pain and functioning. Based on these results, future studies should examine the potential benefits of targeted interventions to improve resilience and help ameliorate pain disparities among racial and ethnic minorities.

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PSYCHOLOGICAL RISK FACTORS AND THEIR RELATION TO KNEE PAIN SEVERITY IN ADULTS WITH OR AT RISK FOR KNEE OSTEO-ARTHRITIS

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Background: Knee pain is a widespread clinical problem, with almost half of those aged 50 and over reporting pain at the knee and 25% of these experiencing symptoms of a chronic nature. Considerable evidence demonstrates that radiographic findings (e.g., osteophytes) are only modestly associated with the severity of knee pain, signaling that factors beyond disease severity influence symptom severity. Psychological risk factors such as pain catastrophizing, anxiety, depression and negative affect may play a significant role in explaining knee pain severity, beyond radiographic evidence of knee OA. This study had two aims: 1) to examine differences in psychological risk factors between pain-free controls and people with knee pain, and 2) to examine the relationships among psychological risk factors and knee pain severity.

Methods: We collected survey data from pain-free controls ($N = 65$) and individuals with knee pain who either had, or were at risk of having, knee OA ($N = 187$). Participants self-reported psychological and health related constructs including: clinical pain severity on the Western Ontario & McMaster Universities Osteoarthritis Index (WOMAC), Positive and Negative Affect Schedule (PANAS), pain catastrophizing on the Coping Strategies Questionnaire-Revised (CSQ-R), and PROMIS-Anxiety and Depression.

Results: The knee pain group reported significantly greater depression ($p < .001$), anxiety ($p = .006$), negative affect ($p = .004$), and pain catastrophizing ($p < .001$) relative to pain-free controls. Within the knee pain group, we found that greater severity of knee pain was significantly correlated with depression ($r(184) = .365$, $p < .001$), anxiety ($r(183) = .300$, $p < .001$), negative affect ($r(182) = .410$, $p < .001$), and pain catastrophizing ($r(186) = .552$, $p < .001$).

Discussion: Prior research has demonstrated that psychological risk factors play a significant role in explaining increased pain severity across various chronic pain conditions. These results specifically suggest that depression, anxiety, negative affect, and higher pain catastrophizing represent psychological risk factors for greater knee pain severity in individuals with or at risk for knee OA. This research points toward a need for evidence based psychotherapeutic treatments addressing these psychological risk factors for those with knee pain.

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RESILIENCE PHENOTYPES PREDICT PHYSICAL AND COGNITIVE FUNCTIONING IN OLDER ADULTS WITH CHRONIC LOW BACK PAIN

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Introduction: Chronic pain has emerged as a public health priority, resulting in a number of negative psychological, physical, and health-related sequelae. Despite its associated burden, it is recognized that individuals differ in their experience of and ability to cope with pain. While some are adversely impacted, others maintain adaptive physical and psychological functioning even in the context of severe pain, suggesting a high degree of resilience in this population. However, limited research has considered the role of positive resources in promoting pain resilience as efforts have traditionally focused on psychosocial and behavioral vulnerabilities associated with chronic pain, particularly among older adults. Likewise, the factors that promote adaptive functioning in individuals with pain have largely been examined independently. Combining these factors to conceptualize resilience from a broader biopsychosocial perspective may have greater clinical relevance than examining them in isolation.

Methods: Sixty adults (ages 60–93) with chronic low back pain (cLBP) completed measures of psychological (positive affect, hope, wellbeing, optimism), health (waist–hip ratio, body mass index, medical comorbidities), and social (emotional, instrumental, informational support) functioning. Principal components analysis was conducted to create composite domains for these measures, followed by cluster analysis to identify phenotypic subgroups based upon composites.

Results: Four resiliency profiles emerged from the cluster analysis: Cluster 1 (41.7%; high levels of psychosocial and health-related functioning); Cluster 2 (21.7%; optimal health, low psychosocial functioning); Cluster 3 (25.0%; high psychosocial function, poorer health); and Cluster 4 (11.7%; low levels of functioning across the three composites). In a subsequent step, cluster group differences across symptoms found to be prevalent in cLBP were examined: sleep disturbance, fatigue, and cognitive impairment. After controlling for demographic and clinical factors (age, race, income, marital status, pain severity), individuals with the highest levels of resiliency (Cluster 1) demonstrated more optimal outcomes in sleep and fatigue ($p < .001$), when compared to individuals with a less resilient phenotype (Cluster 4). Further, the High Resilience (Cluster 1) and High Psychosocial/Low Health (Cluster 3) clusters had lower cognitive impairment than the High Health/Low Psychosocial (Cluster 2) and Low Resilience (Cluster 4) groups (all $p \leq .001$).

Conclusions: Results signify that a higher array of protective resources may buffer against the negative sequelae associated with chronic pain. Importantly, findings support the multidimensional nature of resilience and suggest that targeting resiliency from a multisystem perspective may optimize interventions for older adults with chronic pain.

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PSYCHOSOCIAL AND BEHAVIORAL CORRELATES OF PAIN-RELATED SMOKING EXPECTANCIES AMONG SMOKERS WITH CHRONIC PAIN

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Expectancies that smoking helps to cope with chronic pain (CP) reinforce smoking behavior and may act as a barrier to quitting. The extent to which pain-coping expectancies relate to risk factors that are common in CP populations is unknown. Our study examines associations between pain-coping expectancies and risk factors for smoking maintenance among smokers with CP.

Smokers with CP ($n=504$; M age= 46 ± 13 yrs; 58% female; 24% minority race; 74% < college degree) were recruited online in the US and completed a survey about pain and tobacco smoking. We assessed several factors thought to be important in maintaining smoking and hindering cessation. Pain measures included the bodily pain and the physical functioning scales from the SF-12 health survey (score range 0–100), and current use of pain medications (yes/no). Psychosocial measures included psychological distress (Kessler Scale; 0–24), major depression (Patient Health Questionnaire), and trait pessimism (Life Orientation Test; 0–12). Behavioral measures included the number of past-year quit attempts, number of cigarettes per day, Fagerstrom scale for nicotine dependence (0–10), lifetime use of pharmacologic evidence-based treatment for smoking cessation (EBT; yes/no), lifetime use of non-pharmacologic EBT for cessation (counseling, quitline, or text message; yes/no), motivation to quit smoking (Motivation to Stop Scale; 1=“I don’t want to stop smoking” to 7=“I really want to stop and intend to in the next month”), pain-smoking self-efficacy (1–7), and perceived difficulty quitting (1–10). Pain-coping expectancies were measured with the pain and smoking inventory (e.g., “smoking helps me think about something other than my pain”; 0=“not true at all” to 6=“extremely true”). Higher scores reflect greater use of smoking to cope with pain. Data were analyzed with multiple linear regressions. All factors were entered simultaneously along with demographics.

The model explained 33% of the variance ($F(16, 487) = 15.4, p < .001$). Higher expectancies scores were associated with younger age ($\beta = -.16, p < .001$), college education or higher ($\beta = .13, p = .001$), lower physical functioning ($\beta = -.11, p = .01$), greater distress ($\beta = .20, p < .001$), smoking fewer cigarettes per day ($\beta = -.15, p = .002$), higher nicotine dependence ($\beta = .19, p < .001$), lower self-efficacy to resist smoking with worsening pain ($\beta = -.20, p < .001$), and greater perceived difficulty quitting ($\beta = .10, p = .02$). Greater expectancies scores were also observed among those using pain medications ($\beta = .09, p = .02$), those who never used pharmacologic EBT ($\beta = -.01, p = .02$), and in those who have used non-pharmacologic EBT ($\beta = .14, p < .001$).

We have identified several risk factors for smoking maintenance that are associated with pain-coping expectancies among smokers with CP. This is the first step in identifying potential targets for smoking cessation approaches tailored to this population.

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PRESCRIPTION OPIOID USE IN MOTHERS WITH PAIN: RELATIONS WITH MEDICATION BELIEFS AND CHILD PERCEPTIONS OF HARM

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Objective: For mothers with chronic pain, opioid therapy presents as a lifeline for managing pain and activities of daily living, such as parenting. For children of mothers with chronic pain, exposure to maternal medication beliefs and opioid use patterns may influence children's perceptions of harm from opioids. The current study aimed to evaluate the association between maternal opioid use patterns, mothers' own medication beliefs, and perceptions of harm of opioid use in their children. We hypothesized that chronicity of maternal opioid therapy would predict favorable beliefs about the benefits of opioids in mothers, and lower perceptions of harm from opioid use in their children.

Methods: Mothers with chronic pain and one child 8-12 years old (n=165 dyads, 52.7% F) were recruited as part of a larger longitudinal study examining the impact of maternal chronic pain on children. Mothers completed an annual survey for 3 years and reported on current opioid use. In Year 3, mothers reported on medication beliefs and children (M age 12.3) completed the Perceived Harm of Opioid Use scale. Mothers were categorized into 3 groups: 1) *No opioid use* (consistent across all 3 years), 2) *Shorter term/PRN users* (1 year daily use or 1-3 years PRN use), and 3) *Long-term daily users* (3 years of use and daily use endorsement). Analysis of variance (ANOVAs) and posthoc tests examined differences in mother and child beliefs by maternal opioid group.

Results: Mothers with long-term daily use (n=29) and short-term use (n=48) reported significantly greater beliefs in medication necessity ($p=.001$), better functioning with free access to medication ($p<.05$), and improved mood with pain medication ($p<.05$) compared to mothers with no opioid use (n=88). Long-term daily users reported a greater need for more pain medication compared to short-term and no use groups ($p's<.01$), as well as improved pain control from medications ($p<.02$) compared with the no opioid use group only. Children's beliefs about potential harm from prescription opioid use did not differ by maternal opioid use pattern.

Conclusion: Chronicity of maternal opioid therapy predicted favorable beliefs about the necessity of opioids and access to opioids as key to managing mood, pain, and daily function. Unexpectedly, children's perception of the risk of harm from opioids was not related to mother use patterns, suggesting this aspect of child risk for later substance use is not impacted by maternal prescription opioid use.

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PAIN AS A PREDICTOR OF EXERCISE GROUP ATTENDANCE AMONG SMOKERS ENROLLED IN A CESSATION TRIAL

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Background: Exercise has been purported to serve as a strategy to aid cessation among smokers engaged in a quit attempt. However, smokers have high rates of chronic pain that may interfere with engaging in exercise. Indeed, individuals with chronic pain often avoid engaging in exercise due to concerns about exacerbating pain. In the context of an RCT designed to test the efficacy of moderate-intensity aerobic exercise (AE) relative to health education contact (HEC) control among smokers initiating a quit attempt, we examined whether chronic pain was associated with exercise group attendance.

Method: Two-hundred and thirty-one (70.1% female; mean age= 45.3 years) low-active smokers with depressive symptoms were randomized to either AE (n = 119) or HEC (n = 112). Each condition consisted of 12 weekly, in-person group sessions. In addition, all participants received 6 sessions of individual standard smoking cessation telephone counseling plus 8 weeks of nicotine patches. Quit day for all participants was the beginning of week 5. Attendance was taken at each of the 12-week in-person group sessions. Participants were considered to have chronic pain if they endorsed past AND current pain of any of the following: arthritis, joint, muscle, and back pain.

Results: Approximately 40% of the randomized sample reported chronic pain and rates were similar in the AE and HEC conditions. While n = 30 participants never initiated the intervention after being randomized, there was no difference in rates of chronic pain between those who did and did not initiate the intervention. Rates of chronic pain were higher among women than men (44.6% vs. 30.6%, respectively; $c^2 = 3.47$, $df = 1$; $p = .06$). A general linear model was constructed with number of intervention groups attended as the dependent variable and condition, chronic pain, and a condition X chronic pain interaction term as independent variables and gender and age as covariates. Results revealed a significant condition X chronic pain interaction in predicting group attendance ($F(1, 2.7) = 34.4$, $p = .01$). Participants with chronic pain attended an average of 8.4 (SD = 3.2) HEC sessions and 7.5 (SD = 3.2) AE sessions. In contrast, participants without chronic pain, attended an average of 7.9 (SD = 3.7) HEC sessions and 8.5 (SD = 3.4) AE sessions.

Conclusion: High rates of chronic pain were observed among smokers engaging in a quit attempt. People with chronic pain had decreased attendance at exercise sessions, relative to attendance at health education sessions, whereas the opposite was true for those without chronic pain. It is possible that chronic pain may interfere with engagement in exercise even among smokers interested in physical activity as a smoking cessation strategy. Future studies implementing exercise as an intervention for smoking cessation or mental health symptom reduction, more broadly, may need to consider the role of chronic pain on adherence.

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THE EFFECTIVENESS OF A BRIEF AVATAR-GUIDED ACCEPTANCE AND COMMITMENT THERAPY DIGITAL INTERVENTION (ALGEAPP) FOR CHRONIC PAIN

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Acceptance and Commitment Therapy is an empirically supported intervention for the management of Chronic Pain. Increasing demands for cost reduction in healthcare services in addition to obstacles regarding physical access to treatment, highlight the need for innovative, cost-reducing, digital self-management interventions. Low adherence, nonetheless, is a significant challenge often faced in digital interventions, which may impact treatment effectiveness and result in high dropout rates (Kelders et al., 2012). Very few digital interventions appear to be planned for adherence a-priori, when designing an intervention. In addition, there is a lack of brief digital interventions with minimum human contact, in the field of CP. The main purpose of this study was to design an engagement-focused, brief, Avatar-led intervention for CP management and evaluate its effectiveness. Sixty-four participants were randomly allocated to the intervention group (ALGEApp) or an active control group (relaxation techniques). Both groups significantly contributed to improvements in the short-term on primary treatment outcomes of pain daily interference and quality of life; secondary outcomes of mood; and proposed processes of change outcomes of acceptance and psychological flexibility. ALGEApp demonstrated improvements in acceptance to a greater extent than the control. Satisfactory adherence and completion rates favored the ALGEApp group. Findings highlight the potential of brief, planned-for-engagement digital interventions, on reaching and engaging users who may not have easy access to treatment, while providing a set of skills to help them manage their pain through a home-based self-care approach.

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A BRIEF 10-ITEM MEASURE FOR RAPID IDENTIFICATION OF PAIN-RELATED FEAR-AVOIDANCE IN YOUTH WITH CHRONIC PAIN

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Background: Pain-related fear and avoidance are increasingly shown to influence adult and childhood chronic pain. This series of two studies describes the development and psychometric examination of a short version of the Fear of Pain Questionnaire for Children (FOPQC-SF) to enable rapid identification of fear-avoidance in youth. We also assessed clinical indices of the FOPQC-SF to promote its use in clinical practice.

Methods:

Study 1 – Item selection: 613 youth with mixed etiology chronic pain (80.3% female; *Age* = 14.7 years, *SD* = 3.16) completed the FOPQC long form at the Chronic Pain Clinic at Boston Children's Hospital. Data were entered into SPSS for exploratory factor analysis to select the most appropriate items for the FOPQC-SF based on their factor loadings, with the goal of maintaining a two-subscale structure with 5 items each on the fear and avoidance subscales.

Study 2 – Preliminary reliability, validity, and clinical cutoffs: 526 youth (70.1% female; *Age* = 14.7 years; *SD* = 2.58) completed the FOPQC-SF at the Pediatric Chronic Pain Clinic at Stanford Children's Hospital. They also completed the Pain Catastrophizing Scale - child version (PCS-C), a pain severity index, and Patient Reported Outcomes Measurement Information System (PROMIS) measures. We performed a confirmatory factor analysis and calculated clinical reference points and a reliable change criterion.

Results: The FOPQC (long form) and FOPQC-SF (short form) total scores correlated very highly ($r = .96, p < .001$). The subscales also correlated highly across the long and short forms (Fear: $r = .92, p < .001$; Avoidance: $r = .95, p < .001$). A CFA revealed one item previously on the avoidance subscale was better suited to the fear subscale. After making this modification, our second CFA showed acceptable to excellent model fit ($\chi^2 = 133.25, p < .001$; $\chi^2/df = 3.92$; CFI = 0.95; RMSEA = 0.08 [90% CI = .06 - .09]). The FOPQC-SF demonstrates excellent construct validity, with total scores correlating with the PCS-C ($r = .64, p < .001$) and PROMIS anxiety measures ($r = .59, p < .001$). 94 participants completed the FOPQC-SF a second time, three months after their baseline clinic visit. Test-retest correlations suggest adequate internal consistency ($r = .635, p < .001$). We calculated the scores for clinical reference groupings as follows: low < 20; moderate = 20-25; high ≥ 26 , and the reliable change criterion as $> \pm 8.6$ points.

Conclusions: This short form retains similar reliability and validity as the long form, and is suited for rapid identification of pain-related fear and avoidance in youth during clinic evaluations and for clinical registries. To aid integration into clinical practice and intervention trials, we provide clinical reference points to classify patients, and a criterion to assess treatment response longitudinally.

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PAINFULLY MISSING SPORTS: THE ROLE OF SPORTS PARTICIPATION AND ATHLETIC IDENTITY IN PEDIATRIC CHRONIC PAIN

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Background: Chronic pain in childhood is often disruptive to children's everyday lives, restricting their participation in sports, school, and other activities. Restriction in sports may be especially difficult for children who strongly identify with their athletic identity (AI) and cause worse behavioral and emotional outcomes. Therefore, we expect children higher in AI to have higher depression, anxiety, functional disability and fear of pain, moderated by whether they're currently participating in sports.

Methods: Youth aged 8 to 21 were recruited from the pain program at Boston Children's Hospital (n = 330). One hundred of these patients reported current participation in a sport, and 136 were not currently in a sport but were planning to return. The remaining youth were excluded due to never being involved in a sport or no intent to return (n=69) or were missing responses to AI questions (n=25). Participants completed the Athletic Identity Measures Scale (AIMS), the Children's Depression Index (CDI), Fear of Pain Questionnaire (FOPQ), Functional Disability Index (FDI) and either the Multidimensional Anxiety Scale for Children (MASC) or the Revised Children's Manifest Anxiety Scale (RCMAS) which were then converted to standardized scores and combined into one measure of anxiety.

Results: Pain duration, age, and gender did not significantly differ based on whether or not children were currently in sports. ANOVA tests revealed that those involved in sport had significantly higher AI ($F(1, 232) = 1.106, p = .002$), lower FDI scores ($F(1, 232) = 10.717, p = .001$), and marginally lower FOPQ scores ($F(1, 232) = 3.763, p = .054$) but did not differ on other measures. Higher AI was significantly correlated with increased anxiety ($p < 0.05, R^2 = .177$). Moderation analyses were non-significant.

Conclusions: Unsurprisingly, children still in sports had lower functional disability. However participants did not differ in fear, anxiety, or depression, indicating that sports participation may not be a strong indicator of well-being, even among athletes. AI may be a slightly better indicator as it correlated with higher levels of anxiety. Future research should investigate whether this correlation indicates a clinical use for addressing AI in chronic pediatric pain patients.

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DIAGNOSTIC UNCERTAINTY IN PARENTS OF CHILDREN WITH CHRONIC PAIN

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Introduction: For families of children with chronic pain, a formal diagnosis provides needed validation and buy-in for an actionable intervention. Unfortunately, many families express uncertainty around their child's pain diagnosis, which has negative implications for pain-related distress and treatment adherence. As of yet, there are no validated measures of diagnostic uncertainty (DU) in children with chronic pain or their parents. This study examined the utility of three items to measure DU in parents of children presenting to a multidisciplinary pain clinic at Stanford Children's Health (SCH).

Methods: There were 66 patient families who completed an electronic survey on parent DU, distress and behavior. DU was measured based on parent responses (yes/no) to the following statements: I have been given a clear label/diagnosis for my child's chronic pain (DU1); I have been given a clear explanation about why my child has chronic pain (DU2); I think there is something else happening with my child's chronic pain which the doctors have not found out about yet (DU3). For those who answered "yes" to DU2, a follow-up statement was presented: Generally speaking, I agree with this label/diagnosis (DU2a).

Parents also completed the following validated measures: Parent Risk and Impact Screening Measure (PRISM), Parent Psychological Flexibility Questionnaire (PPFQ), Parent Pain Catastrophizing Scale (PPCS), and Adult Responses to Child Symptoms (ARCS).

Results: About 50% of parents indicated DU of their child's chronic pain (DU1 range = 43.1-54.5%). For parents prompted with DU2a (N=33), 97% agreed with the label/diagnosis their child was given. All DU items were significantly associated with each other ($\chi^2 = 7.70 - 24.44, p < .01$), suggesting they tap into one underlying construct. Diagnostic certainty vs. uncertainty did not differ by parent cognitive and behavioral responses to their child's pain.

Discussion: About half of parents of children with chronic pain reported uncertainty regarding their child's diagnosis. A 3-item measure was sensitive in detecting differences in DU among parents, but a multidimensional tool might be necessary to detect differences in parent factors by DU. Further analyses are needed to explore how parent DU interacts with child DU, and how this relationship might influence child outcomes.

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D300

10:30 AM–11:30 AM

PREDICTING THE FREQUENCY OF MIGRAINES: RISK FACTORS AND TARGETS FOR TREATMENT

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Introduction: Migraines are a common headache disorder with a lifetime prevalence rate of over 20%. They interfere with sufferer's ability to work or function normally. Research has shown a significant association between chronic pain, depression, smoking, and migraines, as well as environmental and individual migraine triggers. Understanding common migraine triggers may allow for the identification of clear treatment goals aiming at migraine reduction.

Method: A national study examined migraine frequency in 4,502 adult migraine sufferers ($M_{age} = 45.72$, 95.5% female, 91.2% Caucasian) diagnosed by a physician in the 2015 Migraine.com survey in relation to comorbid conditions and potential triggers. Multiple linear regressions assessed the predictive strength of triggers and comorbid psychiatric disorders on migraine frequency.

Results: The majority of participants suffered from 3–7 migraines per month (30.8%) or 15+ migraines per month (32.6%). The regression established that the comorbid conditions of chronic (non-migraine) pain ($\beta = 0.110$) and depression ($\beta = 0.067$), as well as the triggers of bright lights ($\beta = 0.102$), cigarette smoke ($\beta = 0.071$), loud noises ($\beta = 0.145$), alcohol/drugs ($\beta = 0.052$), and using nicotine to cope ($\beta = 0.076$) statistically significantly predict frequency of migraines ($F(7, 4494) = 76.417$, $p < .001$), accounting for 10.6% of the variance. These findings support previous research on migraines, showing that certain conditions and variables can lead to increased frequency of migraines.

Discussion: Those with comorbid conditions and the specific triggers examined in this large population study experienced a significantly higher frequency of migraines. A causal relationship remains unclear, and future research is needed to determine if migraines lead to comorbid conditions, if living with comorbid conditions leads to migraines, or if there is another contributing variable yet to be explored. Regardless of causality, treatment options working with patients suffering from comorbid conditions like depression and chronic pain in addition to migraines should be utilized, as well as ensuring patients receive psychoeducation on migraine triggers, to provide the best possible care.

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D301

10:30 AM–11:30 AM

OPIOID TAPERING IN PAIN REHABILITATION PROGRAM ELIMINATES OPIOID-RELATED DEPRESSION DISPARITY FOR PATIENTS WITH CHRONIC PAIN

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Background: This study evaluated pre- to post-treatment changes in depression symptoms among patients in an intensive outpatient Pain Rehabilitation Program (PRP), taking into account whether patients were using prescription opioids at program entry. Research has found chronic pain patients taking opioids report higher levels of depression, perhaps related to depression predicting initiation of chronic opioid therapy and/or due to depressogenic effects of opioids themselves. However, there is limited research examining whether tapering off opioids in a PRP significantly improves depression, as compared to patients not on opioids.

Methods: Patients ($N=45$) enrolled in a 3-week, interdisciplinary PRP for chronic pain, including group-based treatment from psychology, physical therapy, occupational therapy, nursing, and physicians. Patients were aided opioid tapering, if entering on opioids. All patients discontinued opioids by discharge. During initial assessment (baseline) and discharge (post-treatment), patients completed measures of physical and emotional symptoms and functioning. The depression subscale of the Brief Symptom Inventory (BSI) measured depression. Opioid use was via patient report, confirmed via electronic Prescription Drug Monitoring Program. Data was analyzed using independent samples t-tests and regression/ANOVA.

Results: At baseline, patients on opioids ($n=32$) endorsed more depression symptoms ($M=11.16$, $SD=5.90$) than those not on opioids ($n=15$; $M=6.60$, $SD=5.60$), $t(45)=-2.51$, $p < .05$. All patients had a significant reduction in depression across the program; baseline opioid use was a significant predictor of change in depression scores from pre- to post-treatment ($F(1,45)=4.23$, $p < .05$), with patients on opioids experiencing greater reduction in depression. At post-treatment, there was no longer a significant difference in depression between those who entered on ($M=3.59$, $SD=4.05$) or off opioids ($M=2.53$, $SD=3.42$, $p > .05$).

Conclusions: Among patients with chronic pain enrolled in PRP, those taking prescription opioids report higher levels of depression prior to the program. Results suggest that PRP is an effective treatment not only for weaning patients from opioids, but also for depression for both opioid patients and non-opioid patients. Further, patients taking opioids at baseline experienced a greater reduction in depression and by the end of the program, reported similar levels of depression as non-opioid patients. These results suggest that tapering off opioids through a PRP can mitigate the increased depression risk among patients with chronic pain taking opioids. Comorbid opioid use and depression risk remains a public health concern in the context of the larger opioid epidemic, and PRP may be a viable means to dually target both concerns.

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D302

10:30 AM–11:30 AM

DEVELOPMENT AND VALIDATION OF A DAILY INJUSTICE EXPERIENCE QUESTIONNAIRE

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The Injustice Experience Questionnaire (IEQ) is a validated measure assessing injustice appraisals related to the experience of pain, injury, and disability. This measure is comprised of a 2-factor structure reflecting irreparability of loss related to pain or injury, as well as attributions of blame and unfairness. Although the IEQ has demonstrated value as a significant predictor of maladjustment and psychosocial difficulties in a variety of cross-sectional studies, recent evidence has suggested that patterns of cognitive appraisal may manifest differentially across time due to a variety of factors, including severity of medical symptoms and social and contextual factors. To date, there has been limited inquiry in the variability of injustice appraisals across time. The current study details the development and validation of a brief, daily version of the IEQ for use in daily diary studies. IEQ items were adapted for daily use and were evaluated using 3 rounds of cognitive interviews with 30 adults with chronic low back pain (CLBP). The resulting measure was administered to 2 online, cross-sectional studies each conducted over a 10-day period with a combined total of 317 US adults with CLBP. Study 1 (N = 186) refined the 12-item IEQ measure into a 6-item short-form; exploratory factor analyses suggested optimal model fit for the 2-factor model established in the original IEQ. Study 2 (N = 131) replicated the factor structure using confirmatory factor analysis and demonstrated significant correlations of the daily IEQ with other indices relevant to chronic pain, such as pain catastrophizing, pain intensity, pain-related activity and social interference, depressed mood, and anxiety. In both studies, items from the Daily IEQ showed a significant degree of clustering (intraclass correlations ranging from .577 to .735) but demonstrated sufficient variability at the daily level to allow for daily-level analysis. Our results indicate that, despite a notable degree of stability across the study period, injustice appraisals show a significant degree of stability across time that would warrant their measurement as a time-varying construct. Further examination of antecedents and correlates related to daily injustice appraisals, as well as their potential role as mechanisms of effect, may better explain the dynamics of mood and adaptive behavior in chronic pain populations.

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D303

10:30 AM–11:30 AM

DAILY PAIN APPRAISALS AND ANGER AND THEIR ROLE IN PAIN-RELATED ACTIVITY AND SOCIAL INTERFERENCE

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Cognitive appraisals have long been highlighted as a key factor in patterns of psychosocial adjustment to chronic pain. Among the appraisal patterns most commonly studied in chronic pain in recent years are pain catastrophizing and injustice perception related to pain. However, more recent evidence has suggested that these appraisal patterns may be better characterized as dynamic rather than static processes, such that the intensity and frequency of these cognitions may vary across time and according to context. Accordingly, there remains a need to articulate the role of cognitive appraisal variables in contexts beyond single-time point, cross-sectional studies. The current project utilized data from 131 participants with chronic low back pain captured in a daily diary format across a 10-day period, and examined the direct relationships of daily levels of pain catastrophizing and injustice perception with pain-related daily activity interference and social role interference. Further, we examined the potential intervening role for anger states, commonly highlighted as a potential mechanism of effect in prior studies of injustice perception, in these relationships. Results indicated that higher daily levels of both pain catastrophizing and injustice perception were found to predict greater daily levels of both activity interference and social interference, above and beyond the effects of daily pain intensity. Higher levels of daily anger mediated only the relationship between injustice perceptions and daily social interference, however. These findings replicate prior cross-sectional findings and highlight the potentially dynamic nature of cognitive appraisal, affective states, and social activity in chronic pain. Future research may benefit from articulating other potential antecedents to injustice perception and pain catastrophizing, as well as implementation of study methodologies that allow for a greater degree of inference regarding temporal precedence (e.g., within-day or electronic momentary assessment studies).

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D304

10:30 AM-11:30 AM

CHRONIC PAIN EXPERIENCE IN PEDIATRIC SICKLE CELL DISEASE: A QUALITATIVE EXAMINATION

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Introduction: Chronic pain in sickle cell disease (SCD), that is pain that is present on most days per month and persists for at least 6 months, can begin in childhood and persist through adulthood. Children and adolescents with chronic SCD pain report high levels of functional disability, elevated depressive and anxiety symptoms, and reduced quality of life relative to youth with SCD without chronic pain. However, the course of chronic SCD pain as experienced by youth and their parents is not well-understood. This study aimed to examine the perceptions of youth with SCD and their parents regarding their experience of chronic SCD pain and its management.

Method: Purposive sample was used to recruit youth with chronic SCD pain (ages 10-18) and their parents receiving care at comprehensive outpatient pediatric SCD clinics at a large southeastern children's hospital. Patients and parents separately completed face-to-face individual semi-structured interviews lasting 60-75 minutes. Interviews were recorded and transcribed; memoing was used to develop a working codebook. Content was coded using thematic analysis.

Results: Participants included 11 youth (average age 12.6) with chronic SCD pain and their parents. Patients were primarily female (60%), parents were mostly mothers (91%), and all were Black or African American. Eight codes emerged from analysis, which informed 3 major themes: 1) chronic pain experience, 2) impact on parent and family functioning, and 3) preferences for treatment and intervention components. Patients and parents described the transition from acute to chronic pain in terms of increased pain frequency, changes in pain quality, and healthcare utilization; changes in perceived sense of control over pain; the impact of chronic pain on daily life; and social comparison with peers and difficulties communicating their limitations in activity engagement. Parents and their children also described efforts to protect each other from pain and the challenges of managing chronic pain. Parental behaviors in response to pain, such as coddling or limiting responsibilities, were noted to change as chronic pain persisted over time. Patient experiences with various treatments and preferences for behavioral treatment components, such as preparation for real-life, effective communication about pain, and engagement in daily activities, also emerged.

Discussion: Youth with chronic pain related to SCD experience daily challenges that can affect their quality of life. Tailoring interventions to address the unique individual and family experiences and needs may enhance behavioral pain interventions and optimize the health of youth with chronic SCD pain.

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D305

10:30 AM-11:30 AM

VALIDATION OF THE MODIFIED EXERCISE AND SELF-ESTEEM MODEL IN ENDURANCE ATHLETES

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The research literature supports the capacity of endurance sport participation to improve people's self-esteem and overall well-being in humans. The Exercise and Self Esteem Model, first articulated by Sonstroem and Morgan (1984) and subsequently refined and modified by others (e.g., McAuley et al., 2005), posits a hierarchical model in which physical activity and self-efficacy positively influence general self-esteem via mediation by sub-domains of physical self-worth. However, the extent to which this model holds true for highly active endurance athletes remains untested. The current study tested a Modified Exercise and Self-Esteem Model among participants ($N=584$) who had run at least one marathon in the past year, using psychosocial measures central to the Exercise and Self-Esteem Model. Using SPSS and structural equation modeling, data analysis yielded significant relationships among constructs in the hypothesized model, which provided good fit to the data ($\chi^2 = 15.32$, $df=10$, $p=0.12$; CFI=0.99; SRMR=0.03, RMSEA=0.03). Notably, physical activity and exercise self-efficacy showed a strong, positive relationship ($\beta = 0.31$), and exercise self-efficacy showed significant positive relationships with the subscales of physical condition ($\beta = 0.48$), body attractiveness ($\beta = 0.32$), and strength esteem ($\beta = 0.30$). These results lend support to the robustness of the Modified Exercise and Self-Esteem Model even among highly active marathon runners whose high-volume exercise patterns are often misconstrued as pathological.

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10:30 AM–11:30 AM

THE IMPACT OF FINANCIAL INCENTIVES ON PHYSICAL ACTIVITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective: Evaluate effects of financial incentives on physical activity for adults.

Eligibility criteria for selecting studies: Randomised controlled trials with adults aged ≥ 18 years that assessed the effect of financial incentives on physical activity.

Data sources: MEDLINE, Embase, seven other databases and two trial registries from inception to 17 July 2019.

Design: Data were pooled across five physical activity domains using random-effects models.

Results: Of 5,765 records identified, 51 individual trials ($n=17,773$ participants) were included. Financial incentives increase leisure-time physical activity (standardized mean difference [95% CI], 0.46[0.28,0.63], $k=15$ trials, $n=5,057$) and walking behaviour (0.25[0.13,0.36], $k=20$, $n=3,254$). No change in total minutes of physical activity (0.52 [-0.09,1.12], $k=6$, $n=968$), kilocalories expended (0.19[-0.06,0.44], $k=3$, $n=247$), or the proportion of participants meeting physical activity guidelines (risk ratio [95% CI] 1.53[0.53,4.44], $k=2$, $n=650$) post-intervention was observed. Financial incentives sustain a slight increase in leisure time physical activity (0.10[0.02,0.18], $k=6$, $n=2678$), and they might sustain a slight increase in walking behaviour (0.11[0.00,0.22], $k=14$, $n=2425$), at longest follow-up after intervention has ceased (range: 2–104 weeks).

Summary/Conclusion: Financial incentives probably improve leisure-time physical activity and probably slightly improve walking behaviour but may lead to little or no difference in kilocalories expended or minutes of physical activity at the end intervention. It is uncertain whether incentives change the likelihood of meeting physical activity guidelines because the certainty of the evidence is low. Small improvements in leisure time physical activity and walking behaviour may be sustained over time once incentives have ceased.

PROSPERO Registration: # CRD42017068263

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D307

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THE ROLE OF BODY COMPOSITION AND INTERNALIZED WEIGHT BIAS IN EXERCISE MOTIVATIONS

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Introduction: Individuals with a higher weight status are vulnerable to negative health outcomes, potentially due to dysregulated motivation for healthy behaviors. Derogative attitudes and norms about weight are pervasive in society and when internalized, may independently affect health-related motivation or exacerbate the effects of higher weight status. To examine this, we explored associations among body fat composition, internalized weight bias, and exercise motivations, as well as potential synergistic effects of higher body fat and greater weight bias on motivation.

Method: Participants ($n=114$; 56.5% female; M age=27 years; M body fat=33%) completed a measure of weight bias internalization and a measure of exercise motivation for enjoyment, competency, appearance, physical fitness, and social reasons. We assessed total body fat composition with a full body dual-energy x-ray absorptiometry scan. Controlling for age and gender, linear regressions tested associations among body fat, weight bias, and each exercise motive, and moderated regressions tested the interactions between body fat and weight bias.

Results: Higher body fat was associated with higher internalized weight bias ($\beta=.50$, $p<.001$) and lower exercise motives for enjoyment ($\beta=-.22$, $p<.05$), competency ($\beta=-.26$, $p<.05$), and fitness ($\beta=-.26$, $p<.05$), but not appearance or social motives. Higher weight bias was only associated with higher appearance motivation ($\beta=.40$, $p<.001$). A marginally significant interaction between body fat and weight bias predicted appearance motivation ($\beta=.17$, $\Delta R^2=.02$, $p=.06$). Among individuals with higher body fat, those who had great internalized weight bias had greater appearance motivation than those with lower weight bias.

Conclusions: Although higher body fat was associated with less exercise motivation across several domains, higher internalized weight bias was associated with greater motivation to exercise for appearance reasons. This indicates that weight bias may relate to more extrinsic motivation for exercise. The interaction between body fat and weight bias also suggests that weight bias may promote this type of motivation specifically among individuals of a higher weight. Strategies to mitigate internalized weight bias, such as acceptance-based techniques, may be beneficial for promoting more intrinsic exercise motivation among individuals with higher body fat.

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D308

10:30 AM-11:30 AM

ARE ALL STEPS EQUAL WHEN IT COMES TO HAPPINESS AND WELL-BEING? THE IMPORTANCE OF EXERCISE MOTIVATIONS

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Physical activity has been recognized as an important predictor of health-related quality of life and positive mood states. Recently, exercise has been suggested to be positively related to subjective well-being (i.e., high life satisfaction and positive affect with low negative affect). However, reasons for engaging in exercise and physical activity may differ across individuals. That is, motivations that are more intrinsically-based (e.g., positive health, enjoyment) may have a stronger relationship with well-being and happiness than motivations that are more extrinsically-based (e.g., competition, recognition, appearance). To date, little is known about the relationship between different types of exercise motivations and subjective well-being. The present study examined the relationship between exercise motivations, life satisfaction, and happiness. Participants included male (34%) and female (66%) undergraduate students ($N = 202$; $M_{age} = 20.45$; $M_{BMI} = 23.21$) who completed a battery of psychosocial measures including the Exercise Motivations Inventory (EMI), the Satisfaction with Life Scale (SWLS), and the Subjective Happiness Scale (SHS). Exploratory factor analysis was used to reduce the nine EMI scales to three latent factors: Internal, External, and Body Motivations. A series of two multiple regressions were performed with the latent EMI factors entered as predictors with life satisfaction (SWLS) and subjective happiness (SHS) as outcome variables. Both models were statistically significant in predicting life satisfaction, $F(3, 185) = 3.25, p < .05$, and subjective happiness, $F(3, 185) = 2.91, p < .05$. Intrinsic motivation was the strongest individual predictor in both models, where greater levels of intrinsic motivation was the strongest predictor of life satisfaction, $t = 2.59, p < .05$, and subjective happiness, $t = 2.81, p < .05$. Body motivation was also a significant predictor of subjective happiness where greater body motivation was negatively related to subjective happiness, $t = -2.10, p < .05$. These findings suggest that motivation type may be an important predictor of happiness and life satisfaction benefits that are gained from physical activity and exercise. Practical implications suggest that restructuring goals to be more intrinsic and less extrinsic or body-focused may yield greater well-being benefits.

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10:30 AM-11:30 AM

DAY-LEVEL COUPLING OF ACCELEROMETRY-BASED MOVEMENT BEHAVIORS IN MOTHER-CHILD DYADS

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Background: Physically-active parents tend to have more physically-active children. Many studies in this area have identified mother-child activity associations because mothers are usually the main caregivers who spend more time with their children. However, it is unclear whether this association occur on a daily basis (i.e., are children more active on days when their mothers are more active than usual?) and whether it is more prominent on weekend days or when children are younger (i.e., Is the association stronger on weekend days versus on weekdays, or when children are younger than older?).

Methods: This study examined to what extent mothers and their children's device-based moderate-to-vigorous physical activity (MVPA) and sedentary time (ST) were associated with each other at the day level. Mother-child dyads ($N=193$; Mean age= 11.48, $SD=1.28$) provided 3,614 paired days of waist-worn accelerometry data from six bi-annual waves across three years. Each wave consisted of up to seven days of accelerometry data. Multilevel models tested (1) whether mother's mean levels and daily deviations in MVPA and ST predicted children's corresponding day-level MVPA and ST, and (2) whether these associations were moderated by children's age at each wave or weekend day (versus weekday). Both models controlled for mothers' and children's demographics, daily valid accelerometer wear time, children's age (baseline and at each wave) and BMI-z score.

Results: Significant interactions between weekend day and mothers' deviations in day-level activity levels were identified for models predicting children's daily MVPA ($b=0.28, p < .001$) and sedentary time ($b=0.11, p < .001$). Compared to weekdays, mothers' daily deviations in MVPA and sedentary time had stronger and positive predictivity on children's corresponding day-level activities on weekend days.

Conclusions: Results indicate that mothers and their children's physical activity and sedentary time are coupled at the day level, especially on weekend days. Different intervention strategies are needed to target MVPA and ST during different days of the week. Weekend days may be promising times to encourage physical activity and limit sedentary time for both mothers and children.

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D310

10:30 AM-11:30 AM

AN ECOLOGICAL FRAMEWORK AND INTERVENTION FOR PHYSICAL LITERACY PARENTING IN EARLY CHILDHOOD

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Background: Physical literacy (PL) is a multidimensional concept that includes confidence, motivation, and competence in fundamental movement skills (FMS) leading to lifelong physical activity (PA) engagement. Parents play a central role in shaping PL during early childhood, as they help develop PA and FMS for their young children. While PL has stimulated increased research in recent years, the concept is limited in its translation into effective behavior change interventions in the U.S. The HEROs (HEalthy ENviRONments) study aims to develop a technology-based, interactive intervention to promote healthy eating and PA behaviors for young children in family settings. This study outlines the development of an ecological framework, educational model and intervention materials to promote PL in preschool-aged children living in low-income, rural Colorado communities.

Methods: Intervention development included three core components: 1) a conceptual framework of PL in early childhood informed by HEROs formative research with parents and research literature; 2) an educational model for parents outlining key PL concepts; and 3) theoretically-based intervention materials for parents (Adult Learning Theory, Social Cognitive Theory (SCT)) and preschoolers (SCT) to promote PL.

Results: First, the conceptual framework, *An Ecological Model of Physical Literacy Parenting in Early Childhood*, was driven by the social-ecological model and underlines the contexts in which environmental (e.g. childcare, home, and community) and social (e.g. parent attributes, parent-child interactions, parent perception of child attributes, and parenting practices) variables operate to influence a child's PL. Second, a parent PL model, *Physical Literacy: Learning to Move*, was developed to graphically depict key PL concepts (FMS, competence, and motivation) and PA opportunities focused on the child, parent, and environment. Third, six, 90-minute weekly workshops were developed for parents and children to promote PA, FMS, and PL. Supporting materials included custom mobile apps (3 focused on PA and FMS), activity cards, educational enhancers, and website materials.

Conclusions: The ecological framework and PL educational model highlight the importance of parents in the development of young children's PA and FMS. Intervention materials serve to promote PA and FMS parenting and provide strategies targeting young children's PL.

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D311

10:30 AM-11:30 AM

THE EFFECTS OF EXERCISE DURATION AND INTENSITY ON BREAST CANCER-RELATED DNA METHYLATION

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Background: Across numerous studies, physical activity has been associated with reduced risk of developing breast cancer, yet the biological mechanisms through which exercise may reduce cancer risk are still being explored. Emerging evidence suggests that physical activity may decrease cancer risk via its influence on the methylation of genes associated with cancer.

Objective: The purpose of the current study was to prospectively test in a rigorous experimental design whether aerobic exercise influences DNA methylation in genes associated with breast cancer, and whether a dose-response relationship exists between exercise volume and the degree of change in DNA methylation. We hypothesized that we would observe a dose-response relationship between volume of aerobic exercise and changes in DNA methylation over four months.

Methods: The Genetics, Exercise, and Methylation (GEM) study was a randomized controlled trial in which participants were randomly assigned to one of four supervised aerobic exercise programs that varied in a fully crossed design by intensity (55%-65% versus 75%-85% of VO₂max) and duration (40 versus 20 minutes per session). Participants provided blood samples for assessment of DNA methylation at baseline and immediately after completing the 16-week supervised exercise intervention. Change in percent methylation of 12 candidate genes associated with breast cancer was assessed.

Participants: 276 women (*M* age = 37.25, *SD* = 4.64) were recruited from the Denver metro area to participate in the study. Women were eligible to participate if they were between the ages of 30-45, sedentary (< 60 minutes of moderate intensity exercise per week), and met a list of inclusion and exclusion criteria related to safety for exercise and lack of personal history of breast cancer.

Results: Contrary to hypotheses, we did not observe significant relationships between total volume of exercise completed and methylation for any of the genes of interest. However, longer exercise duration was associated with decreased methylation of RUNX3, *p* = .03, and there was a trend for an association between duration and increased TLR4 methylation in the expected direction, *p* = .07. Moreover, change in VO₂max was associated with decreased methylation of BRCA1, *p* = .02, arguably the most well-known gene for breast cancer risk.

Conclusion: While results were mixed, this study provides initial evidence that increased exercise behavior might affect methylation of genes associated with breast cancer.

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D312

10:30 AM-11:30 AM

THE ROLE OF PHYSICAL ACTIVITY ON HEALTH-RELATED QUALITY OF LIFE AMONG YOUTH LIVING IN URBAN POVERTY

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Researchers have demonstrated the positive benefits of physical activity among youth including improved self-esteem, and higher perceptions of quality of life (Marker, Steele & Noser, 2018; Wretman, 2017). However, there is a limited amount of studies assessing physical activity, and health-related quality of life among Black and Latinx youth living in urban poverty. Race and ethnicity are widely considered a crucial social determinant of health, due to its association with poverty, residential segregation, and unequal access to health care (Mehta, Lee & Ylitalo, 2013; Williams & Jackson, 2005). Therefore the purpose of this research was to examine physical activity and health-related quality of life among Black and Latinx youth living in urban poverty.

A physical activity questionnaire (PAQ-C) and a health-related quality of life inventory (PedsQL 4.0) was administered in the spring of 2018, to 5th-8th grade students in three schools in urban poverty. A one-way analysis of covariance (ANCOVA) was used to assess if PedsQL scores were different among reported physical activity rates. Additionally, a hierarchical multiple regression was performed to see if physical activity rates improved prediction of PedsQL scores, above and beyond grade and sex. The ANCOVA revealed no statistically significant differences in PedsQL scores between physical activity rates $F(1, 146) = 2.17, p = .08$, partial $\eta^2 = .06$, after controlling for sex. The hierarchical multiple regression revealed the full model of sex, grade, and physical activity levels was not statistically significant, $R^2 = .10, F(8, 140) = 1.94, p = .06$, adjusted $R^2 = .05$. Model 1 including sex, did not lead to a statistically significant increase in R^2 of .02, $F(1, 147) = 2.22, p = .14$. The addition of grade did not lead to a statistically significant increase in R^2 of .03, $F(3, 144) = 1.70, p = .17$, and the addition of physical activity did not lead to a statistically significant increase in R^2 of .05, $F(4, 140) = 1.99, p = .10$. The findings reveal the role of physical activity on perceptions of quality of life among Black and Latinx youth in urban poverty. These findings grant insight into the adversity experienced by Black and Latinx youth in urban poverty, and the effects of systemic oppression in the US. More research must also be done to examine the contextual factors of physical activity (peer climate, bullying), since not all physical activity is beneficial to physical, and socio-emotional health.

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D313

10:30 AM-11:30 AM

TIME-VARYING ASSOCIATIONS BETWEEN FEELING STATES AND ACTIVITY-RELATED BEHAVIORS IN OLDER ADULTS: AN EMA STUDY

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Introduction: Hedonic theory posits that individuals are more likely to engage in behaviors that make them feel good (e.g., increased positive affect). Despite evidence that a bout of physical activity leads to acute changes in feeling states (i.e., affect, arousal), little is known about the strength and direction of these associations between physical activity and subsequent feeling states change over the course of the day. Ecological Momentary Assessment (EMA) is an intensive data capture strategy which examines moment-to-moment changes in constructs of interest such as behavior and feeling states in the context of everyday life. This study utilized EMA and time-varying effect modeling to determine the extent to which affective response to physical activity changes over the course of the day in older adults.

Methods: Older adults ($N=104$, age $M=72.3$) participated in a 10-day study and completed 6 random EMA prompts/day via a smartphone. At each EMA prompt, participants reported positive affect (e.g., happy), negative affect (e.g., sad), and arousal (i.e., energy). Participants wore an *activPAL* accelerometer as a device-based measure of time spent stepping in the 15-min before the EMA prompt. Time-varying effect models regressed feeling states on time spent stepping in the 15-min before the prompt. Models were run separately for weekdays and weekend days. Results are rounded to the 5-min interval.

Results: On weekdays, the time spent stepping in the 15-min before the prompt positively predicted feelings of energy from 8:00-11:40am ($b_{\text{range}} = 0.02-0.05$) and 4:00-6:45pm ($b_{\text{range}} = 0.02-0.03$). Time spent stepping in the 15-min before the prompt positively predicted positive affect from 8:00-9:00am ($b_{\text{range}} = 0.02-0.03$) and negatively predicted negative affect from 9:25am-12:50pm ($b_{\text{range}} = -0.005$ to -0.006) on weekdays. On weekend days, the time spent stepping in the 15-min before the prompt positively predicted feelings of energy from 8:00-9:40am ($b_{\text{range}} = 0.02-0.10$). Time spent stepping in the 15-min before the prompt did not predict positive or negative affect on weekend days.

Conclusions: Time spent stepping predicted feelings of energy in the mornings across all days and in the early evening on weekdays. Positive and negative affect responses to stepping were significant on weekdays but for shortened periods of time compared to feelings of energy. Implications for the timing of intervention content delivery in just-in-time adaptive interventions will be discussed.

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D314

10:30 AM–11:30 AM

THE EFFECT OF WORK FACTORS ON NURSES' OCCUPATIONAL PATTERNS OF PHYSICAL ACTIVITY, SEDENTARY BEHAVIOR, AND FATIGUE

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Introduction: Nurses have a psychologically and physically demanding occupation and are the largest professional group within healthcare settings. The physical behaviors of nursing work (e.g. occupational physical activity and sedentary behavior) and specific work factors (e.g. total working hours, shift length, day/night shift) are linked to fatigue. However, it is not fully understood how these factors impact fatigue among nurses. We conducted a study to examine the relations between work schedule characteristics (shift type: day vs. night), occupational physical activity and sedentary behaviors, and momentary levels of fatigue among a sample of nurses working 12-hour shifts. We hypothesized that nurses working day shifts are more active, less sedentary, and experience an attenuated rise in fatigue while at work compared to nurses working night shifts.

Methods: A total of 80 registered nurses working 12-hour day and night shifts participated in this study. Occupational physical activity and sedentary behaviors (e.g., step count, time spent sitting, standing, and walking) were measured for 14 continuous days using an ActivPAL™. Momentary fatigue levels (0=no fatigue to 10=worst imaginable) were measured four times per day via a text message that was sent to nurses' personal cell phone over a 14-day period. Mixed models were used to examine the effect of work factors on occupational physical activity, sedentary behavior, and fatigue. Generalized estimating equations (GEEs) were used to explore the impact of sedentary behavior and physical activity on changes in fatigue during a shift.

Results: Day shift nurses spent significantly more minutes/hour standing (30.2; SD: ± 11.8) and walking (9.1; SD: ± 4.3) and less sitting (20.7; SD: ± 14.0) at work compared to night shift nurses (stand: 27.0 ± 12.5 ; walk: 8.3 ± 4.2 ; and sit: 24.6 ± 15.0). Fatigue increased over the course of a shift for both day and night shift nurses. However, the rise in fatigue was significantly greater during night shifts, compared to day shifts. The relationship between occupational walking and change in fatigue was positive for day shift nurses but negative for night shift nurses.

Conclusion: Our findings suggest day shift nurses are subject to higher levels of occupational physical activity which is positively associated with fatigue. Collectively, this work supports future research that tests whether opportunities for recovery is effective for reducing within shift rises in fatigue among nurses working 12-hour day shifts.

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D315

10:30 AM–11:30 AM

ASSOCIATIONS OF LIGHT VS. MODERATE TO VIGOROUS PHYSICAL ACTIVITY WITH FATIGUE AND STRESS IN CANCER SURVIVORS

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Background: Cancer and cancer related treatments have been shown to have negative side effects on many psychosocial health outcomes, including fatigue and stress. Exercise, specifically moderate to vigorous physical activity (MVPA) has been shown to improve a variety of health outcomes among cancer survivors. However, regular participation in MVPA can be challenging for this population given the high levels of fatigue and negative side effects of cancer therapies and treatments. The purpose of this pilot study was to examine the associations between objectively assessed sedentary time, light PA, and MPVA with affect among adult cancer survivors.

Methods: Adult cancer survivors (n=37, mean age 50.24 years, female=30, average time since diagnosis=8.5 years) completed the Functional Assessment of Chronic Illness Therapy – Fatigue (FACIT-F) subscale and the Perceived Stress Scale (PSS). MVPA, light PA, and sedentary time were measured objectively using an accelerometer (GT3X-BT) which the participants wore for seven days on their non-dominant hip. Accelerometer data were scored using the NHANES cut-points for sedentary (0-99), light PA (100-2019) and MVPA (2020 or higher).

Results: Only 30 of the 37 participants wore the accelerometer per protocol. On average, participants reported spending 666.55 mins/day in sedentary time, 142.63 mins/day in light PA and 38.31 mins/day in MVPA. After controlling for age and years since diagnosis, light PA was significantly negatively correlated with the fatigue subscale of the FACIT (r = -0.45) and the PSS scale (r = -0.38). MVPA and sedentary time showed no correlations with FACIT-F and PSS measures.

Conclusions: Our results showed that light PA and not MVPA was associated with affect, specifically fatigue and stress in this sample of cancer survivors. There is growing evidence for health benefits of engaging in light PA, which can be particularly beneficial and suitable for cancer survivors given their long-lasting symptoms and side-effects. Future studies should examine the efficacy and effectiveness of interventions that incorporate light PA in comparison with the widely recommended MVPA for cancer survivors.

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D316

10:30 AM–11:30 AM

MOTIVATIONAL ORIENTATION AND MESSAGE CONTENT: TESTING THE CONGRUENCY HYPOTHESIS IN A BRIEF PHYSICAL ACTIVITY TRIAL

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Health promotion messages are a fundamental component of behavioral interventions. According to the “congruency hypothesis,” gain-framed messages should be more effective for people who are approach oriented, and loss-framed messages more effective for those who are avoidance oriented. This effect is supported for a variety of health behaviors, but little evidence exists with specific regard to physical (PA).

Purpose: To test the interaction between motivational orientation (MO) and message frame on change in PA after a brief, minimal-contact messaging trial. We expected the MO would interact with message frame to influence change in PA in a manner that is consistent with the congruency hypothesis.

Methods: All methods were approved by the appropriate IRB. Participants were recruited in a primary care clinic waiting room. MO was measured using a validated survey. Participants could volunteer for a brief, low burden PA intervention by providing their contact information to a researcher on-site at the clinic. Of the 110 people who provided contact information, 18% (N=20; 65% female; m(sd) age= 60.3(11.3) yrs) consented to participate upon follow-up. Percent time spent in light (LPA) and moderate-to-vigorous (MVPA) intensity PA was measured by wrist accelerometry for one week at baseline, then again following an 8-week message intervention. Valid accelerometer wear time required at minimum 3 weekdays and 1 weekend day of 10 hours of wear or more. Participants were randomly assigned to one of three message conditions (gain-framed, loss-framed, or neutral/control), and received one PA promotion message per week for 8 weeks. A blinded PA counselor administered two PA counseling sessions (baseline and week 4), using the five A's behavioral counseling framework.

Results: Percent time spent in LPA and MVPA dropped from 62% to 60% (F(df)=2.5(1); p=.13), and from 10% to 8% (F(df)=10.7(1); p<.01), respectively. RM-ANOVA indicated no effect of message condition on change in LPA or MVPA (F(df)< 1.6722(2); p>.21). Further, MO did not effect changes in PA.

Conclusions: The congruency hypothesis was not supported in this brief trial. Results reported here suggest that a low burden counseling and text-messaging protocol is insufficient to improve PA among older adults. Efforts to understand factors that influence intervention reach in the clinic setting are needed.

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D317

10:30 AM–11:30 AM

DISEASE PREVENTION AND ENVIRONMENTAL SUPPORT VIA BIKE USE ON COLLEGE CAMPUSES.

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Background: Physical activity has positive effects on humans' physical and mental health. In addition to personal health, physical activity also provides significant benefits to the environment. Substituting our reliance on gas powered transportation with active commute (e.g., bicycling) will reduce the risk of chronic disease and sustain the environment needed for human existence.

Purpose: The purpose of this research was to describe the most salient environmental and cognitive indicators relative to bicycle use among college-aged adults attending a midwestern liberal arts university. The ultimate goal is to support human and environmental health.

Methods: A cross-sectional study design was used, asking participants to report their perceived barriers, self-efficacy, social norms, beliefs, safety, and community support relative to bicycle use on-campus. Observational data were also collected regarding the accessibility and use of bike racks on campus.

Results: Self-report data included 315 college-aged adults (69% female; 31% male; 85% Caucasian). Sixty-six percent of participants currently owned a bicycle. On a scale of 1 (strong disagree) to 5 (strongly agree), participants reported their barriers to bicycle use was 3.07 (SD=0.53). Using the same scale, participants reported their supportive environment for bicycle use was 3.09 (SD=0.53), self-efficacy was 3.29 (SD=0.59), perceived safety was 2.97 (SD=0.43), social norms was 3.23 (SD=0.44), and relative beliefs was 3.31 (SD=0.37). Observational data demonstrated a total of 689 bicycles present on bicycle racks on campus. Among those observations 83.3% of the bikes were rideable (i.e., tires and chains in working condition).

Conclusion: Increased bicycle use on similar campuses could result in benefits to both human and environmental health. Study results support an understanding of the current active commute on similar campuses. Future research needs to examine how active commute could improve both human and environmental health.

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10:30 AM-11:30 AM

ASSESSING THE INTERPLAY BETWEEN INDIVIDUAL EXERCISE IDENTITY, GROUP EXERCISE IDENTITY, AND PHYSICAL ACTIVITY BEHAVIORS

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Introduction: Identities provide standards for behavioral regulation as well as personally relevant behavioral goals. The concept of individual exercise identity (EI) implies that the stronger an individual identifies as an exerciser, the more likely they are to behave within the normative behaviors that are associated with that identity. Additionally, individuals may adopt a group EI (e.g. cycling or running group) and behave in accordance with the norms, endorse attitudes, beliefs, and/or feelings for the group. It is unclear how these concepts interact and whether they have unique contributions to physical activity behaviors. The purpose of this study was to examine the interplay between individual EI, group EI, and physical activity per week, and whether exercise group membership was a moderator between these associations among a large sample of active adults.

Methods: Participants included 546 adults (70% female; 82% White; M age = 34.3(13.2)) who engaged in physical activity at least two times/wk. They completed a 235-item questionnaire assessing physical activity behaviors, individual EI, group EI, and other psychosocial determinants of physical activity. Hierarchical linear regressions determined the associations between individual EI, group EI, and metabolic equivalent (MET) minutes/wk. Exercise group membership was tested as a moderator. The interaction between individual EI and group EI was also tested. Bayesian linear regressions were conducted with null findings.

Results: Individual EI ($B = 0.4$, $p < 0.01$) and group EI ($B = 0.12$, $p < 0.05$) were associated with MET mins/wk. Only individual EI ($B = 0.43$, $p < 0.01$) was associated with MET mins/wk when both EI constructs were in the model. Exercise group membership did not change the associations between individual EI ($B = 0.10$, $p = 0.051$) or group EI ($B = 0.07$, $p = 0.23$) and MET mins/wk. The interaction between individual EI and group EI was not significant ($B = 0.05$, $p = 0.27$). Bayesian linear regressions confirmed moderate evidence for null hypotheses ($BF_{01} = 2.71 - 4.39$).

Conclusions: Findings suggest that individual EI and group EI are associated with amount of physical activity per week. They also suggest that the strength of the individual EI is a stronger predictor of the amount of physical activity per week over and above group EI. Lastly, participating in an exercise group did not change the associations between individual EI or group EI and amount of physical activity per week.

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D319

10:30 AM-11:30 AM

INTENTION TO MEET THE RECOMMENDED ADULT PHYSICAL ACTIVITY LEVELS IN JUNIOR HIGH SCHOOL TEACHERS: A THEORY-DRIVEN EXPLORATION

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Background: According to the World Health Organization, lack of physical activity (PA) is the fourth leading risk factor globally for attributable deaths. Alarming, survey data in Taiwan have shown that a relatively large proportion of junior high school teachers are physically inactive. Yet, they serve as a role model for students not only in learning, but also in their lifestyle. In addition, prior research has found that increased PA levels contribute to enhanced performance among teachers. However, their intention to meet the recommended adult PA levels remains largely unknown in Taiwan. Therefore, this study aimed to compare male and female junior high school teachers in their intention to meet the recommended PA levels and their associated factors using the Theory of Planned Behavior (TPB).

Methods: A TPB-based quantitative questionnaire was developed, including items measuring the three main TPB constructs—namely, Attitude toward the Behavior (ATB), Subjective Norm (SN), and Perceived Behavioral Control (PBC). A total of 49 individual TPB items were factor-analyzed to form 5 multiple-item scales (i.e., ATB about positive and negative outcomes, general SN, and PBC under facilitating and constraining conditions), which demonstrated satisfactory psychometric properties. In addition, cross-loading on two factors, five items were removed from the factor but included in the multivariate analysis. Survey responses from 146 junior high school teachers were analyzed using multivariate logistic regression to explore the TPB-based factors associated with their intention to meet the recommended adult PA levels, separately by gender.

Results: The theory-driven analysis revealed that high intention to meet the recommended adult PA levels was related to: (1) in male teachers: perceiving supportive SN (AOR=35.32) and intermediate PBC under facilitating conditions (AOR=39.38); (2) in female teachers: perceiving high PBC under facilitating conditions (AOR=6.15), and intermediate (AOR=8.42) and high (AOR=5.46) PBC under constraining conditions. In addition, female teachers who perceived low PBC owing to lack of PA-related knowledge (AOR=0.08) were less inclined to meet the recommended adult PA levels.

Conclusions: Male and female teachers' intention to meet the recommended adult PA levels was differentially associated with different TPB-based factors. Notably, male teachers were strongly influenced by supportive norms and PBC under facilitating conditions. By contrast, female teachers' intention to meet the recommended adult PA levels was mainly driven by their PBC under facilitating and under constraining conditions, as well as PA-related knowledge. These findings could inform future programs tailored for junior high school teachers of different genders to increase their intention to meet the recommended adult PA levels.

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D320

10:30 AM-11:30 AM

DOES MINDFULNESS PREDICT HOW AN EXERCISE BOUT IS REMEMBERED? ASSOCIATIONS BETWEEN TRAIT MINDFULNESS AND REMEMBERED AFFECT

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Objective: How pleasantly an exercise bout is remembered is associated with subsequent physical activity (Kwan et al., 2017). Due to the inherent unpleasant sensations of vigorous physical activity, components of trait mindfulness, including present-focused nonjudgmental observation and emotional regulation, may be positively associated with how pleasantly an exercise bout is remembered. However, the association between trait mindfulness and remembered exercise affect has not been examined.

Methods: In a secondary analysis from an intervention study, healthy young adults (N=94) completed a 15-minute vigorous intensity exercise bout on a treadmill. At baseline, participants self-reported past seven days of physical activity levels (MVPA) and trait mindfulness, measured by the Five Facet Mindfulness Questionnaire (FFMQ). Remembered affect was assessed on a visual analog scale (VAS) from '+100' (*very pleasant*) to '-100' (*very unpleasant*) 15 minutes after the exercise session, at the end of the day, and one week later. Multi-level modeling was used to test the prospective association between trait mindfulness and remembered affect using all three assessment points, while controlling for baseline MVPA. Intervention condition was also included as a covariate because the intervention was designed to target remembered affect.

Results: Overall, the sample was 66% female, 71% White or Caucasian with a mean age of 20.0 years, and a mean BMI of 22.9. The average trait mindfulness score was 3.25 (SD=.42; range: 1-5) and the average baseline MVPA was 209 minutes (SD=294). Trait mindfulness significantly predicted remembered affect, while controlling for baseline MVPA, $b=20.87$, $t(89) = 2.43$, $p = .02$. The strength of the association did not differ across the three assessment points ($p=.91$).

Conclusion: These findings are the first to demonstrate an association between trait mindfulness and how pleasantly an exercise bout is remembered. At this point, it is unclear whether the association reflects shared dispositional tendencies to interpret experiences more positively or if mindfulness is a modifiable intervention target to positively influence affective experiences with exercise. Future research could address this issue.

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D321

10:30 AM-11:30 AM

CLINICAL EXERCISE COMMUNICATION FOR PANCREATIC CANCER SURVIVORS: A MIXED-METHODS ANALYSIS

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Background: Clinical cancer care provides opportunities for exercise assessment and advice to improve survivorship. Exercise is understudied in pancreatic cancer (PC) despite potential to improve survivorship outcomes. Recommendations for cancer survivors include ≥ 150 min/wk moderate-to-vigorous aerobic and ≥ 2 x/wk muscle strengthening exercise. We aimed to characterize the frequency and nature of clinical exercise communication among PC survivors and examine its associations with meeting exercise guidelines and perceptions of receiving advice.

Methods: We performed retrospective chart review among PC survivors who underwent tumor resection and participated in a previous survey study (N=146). Surveys assessed aerobic and strengthening exercise and perception of receiving exercise advice from providers. Charts were searched systematically for the keywords "exercise," "physical activity," and "activity" (and variants) from diagnosis through survey date. Two coders analyzed exercise-related passages using an iterative, general inductive approach.

Results: Participants were 45% female with mean age 66 (SD=11) and 74 months since surgery (SD=50). Self-reported adherence to aerobic, strengthening, and both exercise guidelines was 38%, 40%, and 23%, respectively. 66% of participants reported receiving exercise advice from providers. Participants had, on average, 10 exercise communications (SD=8) and 1 communication per restaging visit (SD=.8). Few notes addressed exercise frequency (35%), intensity (6%), or duration (16%) or discerned between aerobic (31%) and strengthening exercise (15%). There were no significant associations among exercise communication frequency and odds of meeting aerobic, strengthening, or both guidelines (all $p > .05$). Number of exercise communications was associated with increased odds of perceiving exercise advice from cancer care providers (OR=1.1, 95%CI 1.01-1.13). Qualitative themes included assessment, advice, facilitators, barriers, and outcomes.

Conclusion: PC survivors generally receive clinical exercise communication, but there are important opportunities to improve assessment and prescription of details including frequency, intensity, duration, and mode. Although more communication may increase survivors' perceptions of receiving exercise advice, it may be insufficient to elicit guideline-concordant behavior. This highlights the importance of integrating formal exercise programming and referral pathways into PC care and survivorship.

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D322

10:30 AM–11:30 AM

REACHING PHYSICAL ACTIVITY GUIDELINES THROUGH SEAMOS ACTIVAS, A THEORY AND TECHNOLOGY ENHANCED INTERVENTION FOR LATINAS

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Introduction: Latina women report disproportionately high rates of physical inactivity and related chronic health conditions (obesity, diabetes). Physical activity (PA) efforts to date have shown modest success in this at-risk population. A culturally and linguistically adapted, print-based physical activity intervention (*Seamos Saludables*) produced significant increases in moderate to vigorous physical activity (MVPA) from baseline to 6 months (+71.49 min/week) compared to control (+29.96 min/week). However, only 11% of intervention participants reached the national PA guidelines of ≥ 150 min/week of MVPA. Thus, we enhanced the original intervention to achieve larger, more health enhancing PA increases in Latinas. Intervention refinements involved further targeting key constructs of the Social Cognitive Theory (via additional print materials and more in-depth tailored reports), and incorporating interactive text-message-based self-monitoring strategies. The current study tests the original print-based *Seamos Saludables* PA intervention against a theory and technology enhanced iteration (*Seamos Activas*). Study aims and intervention refinements focus on increasing the percentage of Latinas meeting national PA guidelines.

Methods: A randomized controlled trial (N = 199) of two (original vs. enhanced) tailored PA interventions was conducted. Self-reported PA was assessed at baseline and 6 months using the 7-Day PA Recall.

Results: Participants were primarily overweight/obese (mean BMI = 30.6, SD = 7.56) Mexican/Mexican-American (89%) women. Mean age at baseline was 43.8 (SD=10.11). Fifty seven percent of enhanced arm participants (n = 102) met national PA guidelines at 6 months compared to 44% of original arm participants (n = 97), with a significant difference in the odds of meeting criteria, favoring the enhanced arm, OR = 1.66, 95% CI: 1.09–2.89. The enhanced arm reported increasing MVPA from 14.3 min/week (SD = 25.06) at baseline to 127.9 min/week (SD = 98.91) at 6 months, $p < .01$. Similar significant within group changes in MVPA were reported by the original arm, with no significant between group differences in MVPA total min/week at 6 months ($p = .73$).

Conclusion: Addressing interactivity and accountability through text-messaging, and more rigorously targeting theoretical constructs may be key to helping Latinas achieve nationally recommended, health enhancing PA levels.

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D323

10:30 AM–11:30 AM

APPLYING SELF-DETERMINATION THEORY TO PARTICIPANTS' EXPERIENCES IN FOR-CAUSE PHYSICAL ACTIVITY EVENTS: A QUALITATIVE STUDY

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Introduction: Self-determination theory has recently been applied to understanding physical activity behavior and motivation. For-cause physical activity events reach many people providing them with an opportunity to support a cause while also engaging in physical activity. To date, little existing research has incorporated established physical activity behavior theories to explain participants' experiences in these events.

Purpose: The purpose of this study was to qualitatively explore participants' motivations and experiences related to completing a for-cause physical activity event. We also studied intention to participate in future physical activity and for-cause events.

Methods: Semi-structured interviews founded in a Self-Determination Theory (SDT) and altruism framework were conducted with participants (n=18) of 5K for-cause events. The interview guide and coding structure were guided by SDT as well as grounded theory for emerging themes.

Results: The average age of interview participants was 40.22 years (SD = 10.09). Most participants were women (78%) and white (83.33%). Half of participants had not completed a for-cause event in the past 12 months. Most participants discussed their experiences consistent with SDT constructs. The themes of competence (e.g., feelings of accomplishment completing the event) and relatedness (e.g., shared experiences with friends, family and the community) were most common, followed by autonomy (e.g., personal decision to select and sign up for event). Responses also reflected the importance of identified (e.g., participating in event to stay in shape) and intrinsic motivation (e.g., doing physical activity for pleasure of doing behavior) and altruism (e.g., desire to help others and support charity). In addition, the participants' descriptions of the unique creation of a strong community at the event and continued interest for supporting the cause explained intention to participate in future for-cause events and engage in physical activity.

Discussion: SDT was useful for understanding and explaining participants' motivations and behaviors related to PA in for-cause events. Altruism, while not a core construct of SDT, may be useful to include in future applications of SDT on physical activity behaviors and motivations within the context of for-cause events. Participants' descriptions of intention for future event participation suggest for-cause events may be a unique leveraging point for promoting physical activity.

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D324

10:30 AM-11:30 AM

ACTIVE-AGEING IN PLACE: A COMMUNITY-BASED PARTICIPATORY PHYSICAL ACTIVITY INTERVENTION FOR OLDER ADULTS IN HONG KONG

Lok Chun Janet Lee, MPhil¹, Rainbow T.H. Ho, PhD, REAT, BC-DMT, AThR, RSMT/E, CGP, CMA²¹The University of Hong Kong, Hong Kong, N/A, Hong Kong; ²Centre on Behavioral Health, The University of Hong Kong, Hong Kong, N/A, Hong Kong**Aims and Objectives:** The purpose of this study was to evaluate Active-Ageing in Place, a neighbourhood environment tailored physical activity (PA) education intervention for community-dwelling older adults to increase PA level.**Background:** The World Health Organization (WHO) has made PA recommendations for older adults in terms of type, intensity and frequency. However, the number of older adults attained the recommended level of PA recommended by WHO has remained low in Hong Kong. In the last decade, community-based participatory research (CBPR) methodology was commonly used to develop physical activity (PA) behavioural change intervention, especially for participants from low socioeconomic status group.**Methods:** Forty-seven community-dwelling older adults over 60 years old participated in the 5-week PA education intervention. Participants received a towel and pedometer as participation incentive. Primary outcome was PA level (as measured by WHO criteria and RAPA). Secondary outcomes were measured at individual (exercise self-efficacy, blood pressure, lower body strength, balance), social (perceived neighbourhood cohesion) and environmental (Perceptions of physical activity support in physical environment) levels.**Results:** Following the intervention, twenty participants (43%) were able to fulfill PA recommendations suggested by WHO. For acute intervention effects on aerobic PA level measured by RAPA, RAPA score on aerobic physical activity at post-intervention (Mdn = 6.0) was statistically significantly higher than pre-intervention (Mdn = 3.0), $Z = -5.452$, $p < 0.001$. For acute intervention effects on anaerobic PA level measured by RAPA, RAPA2 score on anaerobic physical activity at post-intervention (Mdn = 3.0) was statistically significantly higher than pre-intervention (Mdn = 2.0), $Z = -5.082$, $p < 0.001$. In terms of attitude at post-intervention, there were significant increase in exercise self-efficacy and decrease in exercise barriers. In terms of changes in physiological parameter and physical ability, there were significant reduction in blood pressure and improvement in balance. The effect ranged from small to medium (Cohen's d : 0.30-0.53, all $p < 0.01$).**Conclusion:** The results suggest that a 5-week PA educational intervention developed by CBPR can promote PA behaviours among community-dwelling older adults that attained WHO recommendations, improve exercise attitude, blood pressure level and balance. PA intervention developed by CBPR may also be relevant to other neighbourhoods aiming to promote PA among community-dwelling older adults.**CORRESPONDING AUTHOR:** Rainbow T.H. Ho, PhD, REAT, BC-DMT, AThR, RSMT/E, CGP, CMA, Centre on Behavioral Health, The University of Hong Kong, Hong Kong, N/A, Hong Kong; tinho@hku.hk

D325

10:30 AM-11:30 AM

THEORY-BASED GENDER COMPARISONS OF PHYSICIANS' INTENTION TO PROVIDE PATIENT COUNSELING ON RECREATIONAL SPORTS AND STRETCHING

Jiun-Hau Huang, S.M., Sc.D.¹, Pei-Chun Kuo, M.S.¹, An-Min Lynn, M.D., M.P.H.¹¹National Taiwan University College of Public Health, Taipei, Taipei, Taiwan (Republic of China)**Background:** Insufficient physical activity (PA) is a key risk factor for overweight/obesity and chronic diseases. Accordingly, more clinical guidelines have recommended that physicians provide patients with exercise counseling (EC) to help increase their PA, including recreational sports and stretching/flexibility training. However, little is known about the intention to provide such EC among male and female physicians in Taiwan. Therefore, this study aimed to compare physicians' intention to provide recreational sports and stretching/flexibility EC, by gender, and their associated factors using the Theory of Planned Behavior (TPB).**Methods:** Based on the TPB constructs—Attitude Toward the Behavior (ATB), Subjective Norm (SN), and Perceived Behavioral Control (PBC), a quantitative survey was developed, including 27 individual TPB items, which were subsequently factor-analyzed to form 5 multiple-item scales (i.e., ATB about positive and negative outcomes, general SN, and PBC under facilitating and constraining conditions), which demonstrated satisfactory psychometric properties. Survey responses from 1,006 physicians were analyzed using multivariate logistic regression to examine the TPB-based factors related to high recreational sports and stretching/flexibility EC intention, respectively and separately by gender.**Results:** This study found that high intention to provide recreational sports EC was related to: (1) in male physicians: perceiving supportive SN (AOR=1.72), intermediate (AOR=1.55) and high (AOR=2.23) PBC under facilitating conditions, and high PBC under constraining conditions (AOR=1.65); (2) in female physicians: perceiving neutral (AOR=2.53) and supportive (AOR=2.92) SN. By contrast, high intention to provide stretching/flexibility EC was related to: (1) in male physicians: perceiving neutral (AOR=1.61) and positive (AOR=1.68) ATB about positive outcomes, neutral (AOR=1.67) and supportive (AOR=3.38) SN, and high PBC under facilitating conditions (AOR=2.02); (2) in female physicians: perceiving high PBC under facilitating conditions (AOR=2.65).**Conclusions:** Male and female physicians' intention to provide recreational sports and stretching/flexibility EC, respectively, was influenced by different TPB-based factors. Also, female physicians appeared to have a higher threshold to provide either type of EC than male physicians. These findings could inform the development of gender-specific programs to increase physicians' intention to provide recreational sports and stretching/flexibility EC.**CORRESPONDING AUTHOR:** Jiun-Hau Huang, S.M., Sc.D., National Taiwan University College of Public Health, Taipei, Taipei, Taiwan (Republic of China); jhuang@ntu.edu.tw

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10:30 AM-11:30 AM

BREAKFAST INTAKE INFLUENCES FEELINGS OF ENERGY BUT IS NOT INFLUENCED BY OBJECTIVE PHYSICAL ACTIVITY IN LGBTQ COLLEGE STUDENTS

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Introduction: Habitual breakfast (BF) consumption is associated with numerous health outcomes and feelings of well-being across the lifespan. The literature also suggests that regular BF behaviors may be a proxy for other modifiable health-related behaviors such as physical activity (PA). Emerging adulthood is a critical life stage for establishing positive behaviors, including both BF intake and adequate PA. Moreover, evidence suggests the existence of health behavior disparities among lesbian, gay, bisexual, transgender, and queer (LGBTQ) college students that may impact feelings of well-being. Thus, the aim of this study was to examine whether BF eating frequency impacts feelings of vigor and fatigue and objectively measured PA in LGBTQ college students.

Methods: Self-identified LGBTQ college students ($n = 41$) were assessed for BF consumption patterns using a web-based 3-day food record tool (ASA24; 1-weekend (WKN), 2-weekdays (WKD)). BF was characterized as an eating occasion that occurred between 5-10AM on WKD and 5-11AM on WKN. Participants were classified as BF skippers (SKIP-BF, omitted BF on at least 1-d of the dietary recall) or BF consumers (EAT-BF, consumed BF on 3-d of the recall). Vigor and Fatigue were assessed using the Profile of Mood States 2-Brief (POMS2). Moderate-vigorous PA (MVPA) was obtained via accelerometer (GT3-X+ ActiLife; minimum of 4-valid d, 10-hr/d). Independent-groups t-tests and Pearson's r for overall bivariate relationships were utilized for data analysis.

Results: SKIP-BF ($n = 20$) and EAT-BF ($n = 21$) were similar in age and weight status (22.4 ± 4.5 vs 22.9 ± 6.0 yo; 24.6 ± 3.5 vs 25.3 ± 8.0 kg/m², respectively; all $p > .05$). No differences were observed between groups in MVPA (EAT-BF = $48.5 \pm 19.18.0$ vs SKIP-BF = $51.25.8 \pm 24.48.6$ min/day; $t = .38$, $p = .71$). EAT-BF reported significantly higher Vigor scores compared to SKIP-BF (8.3 ± 3.7 vs 5.7 ± 4.3 ; $t = -2.1$, $p = .04$) whereas no differences in Fatigue were detected (7.1 ± 5.3 vs 8.4 ± 5.4 , $p = .46$). In the total group, MVPA was not correlated with Vigor or Fatigue ($r = -.15$ and $-.25$, both $p > .05$).

Conclusion: Feelings of vigor are greater in LGBTQ college students whom consume BF compared to those who do not irrespective of MVPA behaviors. Causal research designs are warranted to better elucidate the impact of BF intake on feelings of vigor and fatigue in emerging adults, especially in the LGBTQ population known to have health disparities in feelings of well-being.

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D327

10:30 AM-11:30 AM

EXPLORING SOCIAL MOTIVATION FOR PA AMONG LATINAS WITH OSTEOARTHRITIS AND A MEMBER OF THEIR SOCIAL NETWORK

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Purpose: The social environment (e.g., social support, modeling) influences the physical activity (PA) of Latinas and other minorities. There is a dearth of evidence on the impact of the social environment on the PA of Latinas with osteoarthritis (OA), who may experience PA-limiting symptoms (e.g. pain and stiffness). The purpose of this study was to qualitatively explore how Latinas with OA and a self-selected supporter of their PA motivate each other's PA.

Methods: Separate semi-structured dyadic interviews were conducted with 14 Latinas with OA and a member of their social network who supports their PA efforts ("supporters"; daughter=5; spouse=4; son=2; granddaughter=1; nephew=1; friend=1). Supporters were ≤ 18 years old. Interviews were digitally recorded in the preferred language of participants and transcribed verbatim in their original language. We used framework analysis to reduce qualitative data to themes and subthemes in Atlas.ti.

Results: Latinas with OA were on average 66 years old (SD 18), 50% married, 50% \geq high school education, 65% retired or homemakers, 36% with a monthly household income $< \$1500$, and 93% born outside the US. Supporters were 50% female, on average 48 years old (SD=23), 71% married/partnered, 93% \geq high school education, 36% retired, 23% with a monthly household income $< \$1500$, and 36% born in the US. Latinas and supporters said that supporters often motivated Latinas' PA by creating opportunities for them to engage in PA together. Other ways of receiving PA motivation included having supporters a) nudge/tell Latinas to engage in PA, b) model PA behaviors, c) talk to Latinas about PA, and d) help them with household responsibilities so that they could be active. In many cases, dyads said motivation to engage in PA was reciprocated between each other rather than focused solely on Latinas with OA. Although most supporters agreed that PA has a positive effect on OA symptoms, many said they did not encourage PA when Latinas experienced symptoms. Several supporters indicated that Latinas' OA was a motivator of their own PA, especially adult children who believed their mothers' OA increased their risk for developing OA in the future.

Discussion: Findings suggest opportunities for dyadic PA interventions among Latinas with OA. Dyadic strategies for promoting Latinas' PA and how motivation may be reciprocated were identified. Further investigation using quantitative methods may help generalize findings to other Latinas with OA.

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10:30 AM–11:30 AM

PREDICTING PHYSICAL ACTIVITY MAINTENANCE AFTER BEHAVIORAL WEIGHT LOSS TREATMENT

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Maintaining a high level of moderate-to-vigorous physical activity (MVPA) after behavioral weight loss (BWL) treatment is key for sustaining weight loss and health benefits. However, prolonged behavior change is challenging and little is known about psychological and behavioral predictors of successful MVPA maintenance. This study examined, among a sub-sample of participants initially successful in adopting the recommended level of MVPA, predictors of MVPA maintenance after BWL treatment. Participants were adults with overweight or obesity who were enrolled in an 18-month BWL treatment in which 250 min/week of MVPA was recommended. Psychological traits (grit, trait self-control) were self-reported at baseline. MVPA was measured via accelerometry and PA-related psychological variables (PA enjoyment, PA acceptance, PA barriers) were self-reported at baseline, during treatment (6, 12, and 18 months), and at follow-up (36 months). PA maintenance at follow-up was coded as a dichotomous variable (>250 min/week of MVPA: Yes/No). Of the 320 participants enrolled in the study, 202 (63%) met MVPA recommendations at >1 time point during treatment (6, 12, or 18 months). At 36 months, 82 (41%) of these participants maintained >250 min/week of unbouted MVPA. Participants who met MVPA recommendations more consistently throughout treatment were more likely to maintain MVPA at 36 months ($p=.003$). Meeting recommendations at 6 and 18 months ($p's<.05$) and engaging in more minutes of MVPA and moderate PA at 12 and 18 months ($p's<.05$) predicted MVPA maintenance at 36 months, controlling for baseline MVPA and accelerometer wear time at each time point. Sedentary behavior, light PA, and vigorous PA during treatment were not associated with likelihood of PA maintenance at follow-up. Baseline psychological variables and change in PA-related psychological variables during treatment were unrelated to MVPA maintenance. Among participants who are successful at adopting a high level of MVPA during treatment, fewer than half maintain the recommended level of MVPA at follow-up, demonstrating the challenge of long-term behavior change. Participants who most consistently engaged in a high level of MVPA during treatment, and did so with the greatest minutes/week, were most likely to maintain MVPA. Future research must think creatively about novel psychological factors and processes that may relate to MVPA maintenance, as the psychological variables examined in this study were not predictive.

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IS THE FRAME THE NAME OF THE GAME? THE INFLUENCE OF MESSAGE FRAMING ON FITNESS CLASS ATTENDANCE

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Background: Despite the inarguable benefits of exercise, less than twenty percent of Americans meet the US Department of Health and Human Service's physical activity (PA) recommendations (CDC, 2017). Many interventions have focused on increasing individual participation in PA, but inspiring participation in group fitness (GF) classes may be more advantageous than promoting individual PA, as GF offers the added benefits of social support and accountability (Estabrooks, 2000). Accordingly, the present study sought to determine the most effective manner to market GF classes by testing the effect of message framing on college students' attendance of a variety of GF classes.

Method: Participants read descriptions of four different fitness classes and selected one of those classes to attend. Each description presented class information with a different type of frame – health-related gain, health-related loss, appearance-related gain, and appearance-related loss – allowing us to compare the within-participant influence of these frames.

Results: Contrary to previous work (Lundeberg & Graham, under review), in which participants' *intention* to attend classes was not influenced by the type of frame, preliminary analyses indicate that participants in this study – who were required to actually *attend* the class they selected – were equally likely to attend classes whose descriptions were framed in terms of appearance gains, health gains, or health losses and were least likely to attend classes whose descriptions were framed in terms of appearance losses.

Conclusions: In our study, participants appeared to be turned away from attending classes whose descriptions were framed in terms of appearance losses (e.g., “don't let your body get flabby!”). Recreation Centers could consider the manner in which they are marketing classes, as including appearance-related loss framing may discourage participants from attending classes.

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10:30 AM-11:30 AM

POSITIVE AND NEGATIVE SOCIAL CONTROL AND PHYSICAL ACTIVITY IN PATIENT-PARTNER DYADS

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Background: Interpersonal processes involving social support as well as social control may affect health behavior. Both social support and social control may foster health behaviors, but they are distinct conceptually (Lewis & Butterfield, 2005) and empirically (Franks et al., 2006; Helgeson et al., 2004). Health-related social control refers to individuals' attempts to influence another person's health behavior. Facets of social control may refer to positive direct persuasion, positive reinforcement and modeling, negative control, or making structural changes in the home environment (cf. Thorpe et al., 2008). This study investigated prospective associations between the four facets of social control and moderate-to-vigorous-physical activity (MVPA) in patient-partner dyads. It was tested if perceived social control would predict MVPA of patients and partners, measured at the follow-up.

Methods: A total of 238 dyads of patients with a chronic illness ($M_{age} = 47.03$; 67.2% women) and their partners ($M_{age} = 45.47$; 65.1% women) provided their data at Time 1 (T1). At Time 2 (T2; the 2-3-month follow-up) 176 patient-partner dyads participated. The path analyses were conducted, controlling for baseline MVPA levels

Findings: Analyses explaining patients' MVPA showed that, patients' perceptions of their partners' social control were unrelated to patients' MVPA at T2. However, partners' perceptions of patients' positive social control-persuasion (T1) predicted patients' MVPA (T2). Analyses explaining partners' MVPA indicated that, partners' perceptions of patients' social control were unrelated to partners' MVPA at T2. However, patients' perceptions of partners' positive social control-persuasion (T1) and negative control (T1) predicted partners' MVPA (T2).

Conclusions: Dyadic effects of social control on MVPA were observed, whereas within-individual effects (e.g., patients' perceptions on patients' MVPA) were not confirmed. The consistent significant effects were observed for patients' and partners' perceptions of positive control exerted by the other person in the dyad.

Keywords: social control; moderate-to-vigorous physical activity; adults; dyads

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10:30 AM-11:30 AM

SYSTEMATIC REVIEW OF BEHAVIOR CHANGE TECHNIQUES AMONG PELVIC FLOOR EXERCISE INTERVENTIONS FOR WOMEN TO ADDRESS INCONTINENCE

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Background: Pelvic floor dysfunction (PFD) can lead to numerous health concerns such as urinary incontinence (UI), fecal incontinence, and organ prolapse. Currently, 75% of the older adults living in nursing homes and senior living communities report problems related to PFD. PFD is an indicator of pelvic floor health, and while often characterized as a condition impacting older adults, currently 25% of all women in the US also report problems associated with PFD. To treat PFD pelvic floor muscle exercises (PFME) are typically prescribed, and have been reported as an effective behavioral treatment for UI, however little is known about what intervention strategies contribute to the most effective results.

Purpose: Therefore, the purpose of this study was to determine which behavior change techniques (BCTs) are used in PFME interventions, and which techniques are associated with better prevention or management of UI among women.

Methods: A systematic search of peer-reviewed literature of PFME interventions that target adult women was conducted using seven databases (i.e. Medline). We retrieved 157 unique results after duplicates were removed. In the initial search. After screening for inclusion criteria, nine articles were included in the final review. Michie's Behaviour Change Technique Taxonomy v1 (BCTTv1) was used by two researchers to independently code BCTs for each intervention.

Results: Across the nine articles, 25 unique BCTs were identified, and articles ranged from reporting 3 to 12 BCTs. The most frequently coded BCTs was "Instruction on how to perform the behavior" (n=9 studies), "Credible source" (n=8 studies), and "Demonstration of the behavior" (n=7 studies). Theoretical constructs measured as outcomes across the interventions included Attitudes, Barriers, Intentions, Knowledge, Outcome Expectations, Self-Efficacy, and Skills. Most of the interventions focused heavily on education, but a few used additional strategies such as training (i.e. instruction on how to perform the behavior), enablement (i.e. self-monitoring of behavior), and modeling (i.e. demonstration of behavior).

Conclusions: Researchers should attempt to explicitly link intervention methods to BCTs, and these should align with appropriate intervention functions. BCTs provide a common language for public health researchers and practitioners to design and communicate interventions. Existing interventions using PFME can benefit from including additional supplementary BCTs.

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D332

10:30 AM–11:30 AM

THE ROLE OF MEANING IN LIFE FOR CHRONIC DISEASE MANAGEMENT: EXPLORATORY PATH ANALYSES

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Chronic disease affects 60% of the adult population in the United States and is the leading cause of death and disability (CDC, 2017). Despite the robust evidence suggesting that management of chronic disease can reduce risk of morbidity and mortality (e.g., Bodenheimer et al., 2002), average adherence to long-term therapies is 50% (Burkart & Sabaté, 2003). Considering meaning in life has emerged as a powerful predictor of physical health (Czekierda et al, 2017), the purpose of the current study was to test the effect of meaning in life on chronic disease management.

The sample for the current study consisted of 99 people (Mage = 29.1, SD = 16.5) across four disease groups: Type 1 and Type 2 Diabetes, Migraines, and Asthma. The sample was predominantly female (84.8%), European-American (82.8%), and single (73.7%). Data was collected at initial enrollment (T1) and 3 months later (T2). It was hypothesized that meaning in life (MIL) would positively predict chronic disease management (CDM) through a proactive health orientation, social support, and self-efficacy (SEF). Path analyses were conducted using Mplus 7.4 (Muthén & Muthén, 1998–2012). In the cross-sectional model, MIL predicted CDM via SEF such that T1 MIL positively predicted T1 SEF ($b = .44$, $SE = .09$, $p < .001$), and T1 SEF positively predicted T1 CDM ($b = .63$, $SE = .07$, $p < .001$). Bias-corrected bootstrapped confidence intervals revealed that total and specific indirect effects were statistically significant (Total = .02 [.006, .03]; T1 MIL- >T1 SEF- >T1 CDM = .03 [.02, .04]). A longitudinal model ($n=47$) was then tested to predict T2 CDM from T1 MIL and T1 SEF. T1 MIL positively predicted T1 SEF ($b = .44$, $SE = .09$, $p < .001$), and T1 SEF predicted T2 CDM ($b = .39$, $SE = .18$, $p = .03$). Bias-corrected bootstrapped confidence intervals revealed that total and specific indirect effects were statistically significant (Total = .06 [.02, .10]; T1 MIL- > T1 SEF- >T2 CDM = .03 [.001, .05]).

Results from this study provide evidence that people with a chronic disease who report higher meaning in their lives are more likely to report better engagement in chronic disease management and that this effect is, in part, explained by their confidence in managing their respective disease. Future intervention efforts designed to promulgate meaning in life for patients with chronic disease may support reasons “why” one's health matters and have a role in generating and sustaining motivation for disease management.

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D333

10:30 AM–11:30 AM

VIOLENCE, MENTAL HEALTH, AND SEXUAL & REPRODUCTIVE HEALTH RISK AMONG GENDER DIVERSE YOUTH IN THE UNITED STATES

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Transgender and gender-diverse (TGD) individuals experience sexual and reproductive health (SRH) disparities compared to their cisgender counterparts, including increased risk for sexually transmitted infections, impaired fertility, unintended pregnancy, and certain cancers. Increased SRH risk among TGD populations are in part due to lower rates of contraceptive use and misunderstandings of pregnancy risk while taking gender-affirming hormones. In the general population, a history of victimization is directly associated with an increased number of sexual partners, earlier sexual debut, greater likelihood of unprotected sex, and a history of sexually transmitted infections. SRH risk is also indirectly exacerbated by victimization through increased mental health problems and maladaptive coping strategies like substance abuse and number of sexual partners. The current study examines the role of violence on SRH risk factors among a sample of gender-diverse youth using secondary data from the 2017 CDC District Youth Risk Behavior Surveillance System survey. The sample ($n=12,503$) consisted of cisgender female (51%), male (47%), transgender (2%), primarily Hispanic (44%), Black/African American (20%), and heterosexual (78%) youth in 9–12 grade from the New York metro area, Broward County FL, and San Diego CA. Controlling for grade level, logistic regression analyses found that TGD youth were significantly more likely than cisgender youth to report ever having sex (OR=2.00, 95% CI: 1.25, 3.17). Among sexually-active youth ($n=2,881$), TGD youth were more likely to report sexual debut before age 14 vs. 14+ (OR=.35, 95% CI: .19, .63), alcohol/drug use during their last sexual encounter (OR=2.34, 95% CI: 1.22, 4.46), and more than 1 sexual partners in the last 3 months (OR=2.37, 95% CI: 1.24, 4.53); and less likely to use a condom at their last encounter (OR=.50, 95% CI: .27, .92). A series of path analyses were conducted to assess the association between gender and condom use through victimization (sexual dating violence and being threatened at school), suicidal ideation, alcohol/drug use during sex, and number of recent sex partners. There were significant indirect effects of gender on condom use through violence factors and suicidal ideation, but not alcohol/drug use or number of partners. Gender was also indirectly associated with alcohol/drug use through violence factors and suicidal ideation. In conclusion, TGD youth had increased SRH risk compared to cisgender youth in part due to violence exposure and associated mental health problems. Future research and interventions should focus on violence prevention, positive coping and behavioral skills for TGD youth, and TGD-inclusive policies and sex education. Schools and healthcare providers should be aware of increased risk and be prepared to counsel youth on the link between victimization, mental health, and SRH risk behaviors.

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10:30 AM-11:30 AM

VALIDATION OF THE SEXUAL DISCOUNTING TASK FOR USE IN AN ONLINE SETTING WITH FEMALE ADOLESCENTS

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Objective: The Sexual Discounting Task (SDT) was developed to evaluate the effects of delay on decision-making as it relates to sexual risk-taking behaviors. Though previously validated with other populations including adolescents and emerging adults, the current study seeks to examine the predictive validity of the SDT for use with adolescents specifically in an online setting.

Methods: A sample of 18-year-old female adolescents ($N = 43$) were recruited to complete the Online SDT (involving choices between immediate unprotected sex and delayed sex with a condom with hypothetical sexual partners). Sexual discounting was assessed using area under the curve (AUC) analyses in that higher sexual discounting values indicate greater willingness to engage in immediate unprotected sex compared to delayed sex with a condom. Additionally, they completed several self-report measures assessing demographic, sexual behavior, and sexual history.

Results: Sexual discounting for partners deemed more desirable was positively correlated with frequency of use of protection during both oral sex ($r = 0.41$, $p < 0.01$) and sexual intercourse ($r = 0.42$, $p < 0.01$). Results were similar for sexual discounting for partners described as having no chance of having a sexually transmitted infection (STI). Sexual discounting for desirable partners was negatively correlated with lifetime oral sexual ($r = -0.32$, $p < 0.05$) and sexual intercourse partners ($r = -0.40$, $p < 0.05$) as well as oral sexual partners within the past 3 months ($r = -0.34$, $p < 0.05$) and sexual intercourse partners within the past 3 months ($r = -0.38$, $p < 0.05$). Sexual discounting for desirable partners was positively correlated with whether they had ever been tested for an STI ($r = 0.38$, $p < 0.05$) as was that for partners described as having no chance of having an STI ($r = 0.40$, $p < 0.01$). Additional analyses are also discussed.

Conclusion: Findings from the current study suggest that the Online SDT is predictive of some adolescent sexual risk-taking behaviors. The Online SDT is shown to be clinically meaningful for female adolescents and is sensitive to factors that influence real-world decisions to use condoms. Future treatment and prevention should consider delay discounting as an important variable affecting sexual risk behavior.

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D335

10:30 AM-11:30 AM

RESULTS FROM A SYSTEMATIC SCOPING REVIEW OF THE LITERATURE ON PARENT-ADOLESCENT SEXUAL HEALTH COMMUNICATION IN THE U.S.

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Background: Effective parent communication about sexual health, including messages, messaging, and delivery, can lead to positive adolescent sexual health outcomes. This study reviewed the academic literature on parent-adolescent sexual health communication and characterized its effectiveness in promoting abstinence, condom use, and sexually transmitted infection (STI)/ HIV testing.

Methods: A systematic scoping review was conducted by searching four electronic databases (Embase, Scopus, Pubmed, Psycinfo) and relevant journals for peer-reviewed articles published January 1, 2000 to February 15, 2018. The search strategy, which included terms for sexual health messaging, adolescents, and communication, resulted in 6,665 articles. Initial abstract and subsequent full article screening were conducted by trained reviewers. Inclusion criteria, determined a priori, included those articles which: 1) were published in English; 2) were conducted in the United States; 3) had a majority of participants aged 13-18; 4) had abstinence, condom use, or STI/ HIV testing as outcomes; and 5) were related to an aspect of sexual health messaging/ communication. Of the total 381 resulting articles included in the final review, the research team reviewed 68 articles specific to parent-adolescent communication.

Results: Articles were grouped into three categories: sexual health topics discussed and their impact on adolescent behavior, characteristics and context of sexual health communication, and parent-based/ focused interventions. The most informative studies used dyadic designs and captured the perspectives of both parent and youth.

Parents were a more valued source of sexual health information for younger adolescents than older ones. Abstinence was a more common topic than condom use and STI/ HIV testing. Effective communication was facilitated by a positive parent-child relationship grounded in trust and openness; embarrassment and lack of knowledge were barriers. Adolescent race, gender, and sexual orientation also shaped parent communication, influencing topics discussed and level of comfort with discussions.

Discussion: While articles on parent-adolescent communication were more numerous than for other messengers, few looked specifically at certain sexual and gender minority and racial/ ethnic groups, such as American Indian/ Alaskan Natives. Further research is needed on how to increase and improve parent-adolescent sexual health communication, especially around condom use and STI/ HIV testing and for certain minority groups.

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D336

10:30 AM–11:30 AM

SYMPTOMS OF SLEEP DISORDERS ARE ASSOCIATED WITH THE MENTAL AND PHYSICAL HEALTH OF COLLEGE STUDENTS

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Background: Symptoms of sleep disorders, including insomnia, are associated with mental and physical health outcomes. College students may be at risk for insomnia and/or delayed sleep-wake phase disorder; however, it is unclear exactly how this risk might affect their mental and physical health. Therefore, this study examined the associations between symptoms of sleep disorders and mental and physical health outcomes among college students.

Methods: College students (n=277) were recruited from a Department of Psychology research subject pool to complete the SLEEP-50 questionnaire, which was designed to detect sleep disorders according to DSM-IV criteria. They also completed the Beck Depression Inventory-II (BDI-II), the State Trait Anxiety Inventory (STAI), and the physical health component of the Duke Health Profile. Bivariate correlation analyses were conducted to examine associations among symptoms of sleep disorders and the measures of mental and physical health.

Results: The sample was 66% female, 82% Caucasian, and 64% freshmen with an average age of 18.84. Results revealed that greater symptoms of insomnia symptoms were associated with greater symptoms of depression ($r = .521, p < .001$) and anxiety ($r = .538, p < .001$), as well as worse physical health ($r = -.536, p < .001$). There was also an association between other sleep disorders and health outcomes. More circadian rhythm sleep disorder symptoms were associated with greater symptoms of depression ($r = .291, p < .001$) and anxiety ($r = .241, p < .001$), as well as worse physical health ($r = -.209, p < .001$). More OSA symptoms were associated with greater depressive symptoms ($r = .392, p = .000$) and anxiety ($r = .288, p < .001$) as well as worse physical health ($r = -.282, p < .001$). Symptoms of Narcolepsy were associated with greater depressive symptoms ($r = .286, p < .001$) and anxiety ($r = .240, p < .001$) as well as physical health ($r = -.205, p = .001$). Lastly, symptoms of Restless Leg Syndrome were associated with greater depressive symptoms ($r = .187, p = .002$) and anxiety ($r = .158, p = .008$) as well as physical health ($r = -.246, p < .001$). Discussion/Implications: College students with symptoms of sleep disorders and poor sleep may demonstrate greater depressive/anxiety symptoms and poorer physical health. Student wellness initiatives could potentially benefit student health even more by screening, and providing interventions for, sleep disorders.

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CITATION AWARD WINNER

D337

10:30 AM–11:30 AM

THE IMPACT OF A LIFESTYLE INTERVENTION ON SLEEP IN HISPANIC POSTPARTUM WOMEN

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Background: Short or disrupted sleep during the postpartum period is associated with adverse maternal outcomes such as obesity, but this has not been well-examined in Hispanic women who experience disproportionately high rates of type 2 diabetes. Studies in general adult populations show that exercise has a beneficial impact on sleep. However, intervention studies among postpartum women are sparse and were primarily conducted in non-Hispanic white populations.

Methods: We, therefore, examined the impact of a culturally modified, individually tailored- lifestyle intervention on sleep quality, duration, and efficiency among participants in Estudio PARTO. Eligible Hispanic women who screened positive for gestational diabetes were randomized to a Lifestyle (n=69) or Health & Wellness control intervention (n=78). The active phase of the intervention began 6 weeks postpartum (baseline) and consisted of face-to-face meetings, mailings, and booster telephone calls targeting exercise and healthy diet. The Pittsburgh Sleep Quality Index (PSQI) was used to measure sleep quality (PSQI global score), duration (hours/night), and efficiency (% of time in bed asleep) at baseline, 6 months, and 1 year postpartum.

Results: At baseline, 54% of participants reported poor sleep quality (PSQI > 5), 46% reported short sleep duration (< 6 hrs/night), and 63% reported low sleep efficiency (< 85%) with no differences between the intervention groups. Mean PSQI score (6.52 ± 3.95), sleep duration (5.95 ± 1.88), and sleep efficiency (75.54 ± 18.81) also did not differ significantly. Overall, there was statistically significant improvement over time in sleep quality (PSQI global score, $-1.30 \pm 4.10, p = 0.003$), sleep duration ($0.61 \pm 2.10, p = 0.003$), and sleep efficiency ($7.68 \pm 21.8, p = 0.0003$) from baseline to 1 year postpartum in both groups. Based on an intention-to-treat analysis using mixed-effects models, we did not observe a statistically significant difference in change in sleep outcomes between the intervention groups.

Conclusion: In this randomized trial among Hispanic women, we found high levels of poor sleep quality, short sleep duration, and low sleep efficiency. However, we were unable to detect a beneficial impact of the lifestyle intervention on postpartum sleep. Subsequent sensitivity analyses will evaluate if findings differ among those compliant with the intervention; among overweight and obese women; and according to self-reported levels of physical activity and diet.

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D338

10:30 AM-11:30 AM

INFLUENCING FACTORS OF SLEEP IN POSTMENOPAUSAL WOMEN WITH AND WITHOUT BREAST CANCER

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Background: Women with breast cancer (BC) is the largest group of cancer survivors in the US. Postmenopausal women with estrogen receptor-positive (ER+) BC are the majority with favorable long-term survival. Sleep problem is common among these aging BC survivors as well as postmenopausal women in the general population, in part, explained by estrogen deficit from menopause. Endocrine therapy with aromatase inhibitors (AI) treats ER+ BC by inhibiting estrogen production up to 98% in postmenopausal women, indicating an additional risk of sleep problem in these women. However, little is known about sleep in BC survivors on AI therapy beyond active chemo- and radiotherapy. Comparison studies, including healthy postmenopausal women, are lacking in the context of menopause experience and reproductive and behavioral factors.

Purpose: To examine the relationships of postmenopausal BC survivorship, menopausal (vasomotor and musculoskeletal) symptoms, reproductive health factors (i.e., pregnancy and hormone replacement therapy [HRT]), and behavior factors (i.e., depression and smoking) with sleep quality in postmenopausal women with and without BC.

Method: This cross-sectional, descriptive study included a total of 102 postmenopausal women (mean age of 60): 64 survivors of early-stage, ER+ BC and 38 cancer-free women. All BC survivors completed the active BC treatment and were on AI therapy at least 2 years or longer (a mean survival of 5.4 years). Data were collected using self-administered questionnaires and medical record reviews. Sleep quality was assessed by the Pittsburgh Sleep Quality Index (PSQI).

Results: The global PSQI scores and individual components (e.g., sleep duration, efficiency etc.) were similar between two groups. About 35% were identified as a poor sleeper (PSQI ≥ 6), but the majority of women also reported shorter sleep duration (mean 5 hours per night) compared to professional recommendations. BC treatment characteristics including AI therapy had no association with PSQI in BC survivors. A series of regression analyses revealed that poorer sleep quality, regardless of BC survivorship, was associated with current smoking, higher depressive symptom, more menopause symptoms, 1st live birth at younger age, and no history of HRT (p values ranged from $< .0001$ to $.046$, adjusted $R^2 = .545$). Depressive symptom and current smoking together explained 44% of variance in sleep quality among postmenopausal women.

Conclusion: Sleep quality was associated with various factors, such as reproductive and behavior factors, in postmenopausal women. Behavior factors, specifically depressive symptom, were the main contributor to poor sleep quality. Assessing depressive symptom and sleep and providing proactive lifestyle change/management strategies needs to be incorporated to the BC survivorship care plan and to the standard primary care plan for postmenopausal women.

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D339

10:30 AM-11:30 AM

INFLUENCE OF A PRENATAL WEIGHT MANAGEMENT INTERVENTION ON SLEEP QUALITY

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Prenatal sleep quality may decrease due to increased sleep disturbances. This reduction of sleep quality may result in negative pregnancy outcomes for mother and baby (e.g., excessive gestational weight gain (GWG), and fetal growth restriction). Few, if any, prenatal interventions include sleep hygiene education. The purpose of this exploratory secondary analysis was to examine the effect of an individually-tailored, multicomponent behavioral intervention designed to promote effective GWG regulation on sleep quality.

Methods: Healthy Mom Zone is a randomized control trial comparing an individually-tailored, adaptive intervention to a standard of care control. Pregnant women with overweight/obesity (PW-OW/OB; N=31; 52% obese) were randomized at ~8 weeks gestation. The sleep hygiene component included education on reducing TV time/use of electronics at night, establishing a consistent bedtime, staying hydrated during the day but reducing liquids before bedtime, etc. The Pittsburgh Sleep Quality Index (higher score ≥ 5 indicates poorer sleep quality) was used to assess sleep quality from ~9 -36 weeks gestation. A 2 x 2 factorial design was used to examine main effects and interactions for sleep quality by study group and weight status; significance was set at $p < 0.10$ as appropriate for exploratory analyses. The main effects for study group [INT ($M_{\text{change}} = 1.25$) vs. CON ($M_{\text{change}} = 0.16$)] and weight status group [OW ($M_{\text{change}} = 1.22$) vs. OB ($M_{\text{change}} = 0.19$)] on sleep quality scores were not significant. There was a group X weight status interaction such that PW-OW-CON (n=5; $M_{\text{change}} = 1.60$) had a greater change in sleep quality scores compared to PW-OW-INT (n=6; $M_{\text{change}} = 0.83$; $p = 0.09$). There were no significant changes in sleep quality scores between PW-OB-INT/CON (INT: n=3; $M_{\text{change}} = 1.67$; CON: n=7; $M_{\text{change}} = -1.29$; $p = .29$). PW-OW-INT experienced less of an increase in poor sleep quality scores compared to PW-OW-CON. These exploratory findings suggest that a prenatal weight regulation intervention with a focus on sleep hygiene may have potential for reducing poor sleep quality in PW-OW. However, future research is needed to replicate these findings as well as to better understand why similar effects were not observed in PW-OB in an effort to promote good sleep quality among PW-OW/OB.

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D340

10:30 AM-11:30 AM

SLEEP EDUCATION TRAINING AMONG PRACTICING CLINICAL PSYCHOLOGISTS ACROSS CANADA AND THE UNITED STATES

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Introduction: Approximately 50-70 million Americans have a diagnosable sleep disorder. Psychologists often encounter patients who report sleep disturbance due to a sleep disorder and/or mental health concern, and psychological treatments are efficacious treatments for sleep disturbances alone (e.g., CBT-I) or in combination with medical approaches (e.g., continuous positive air pressure [CPAP] adherence). Despite psychologists' role in diagnosing and treating sleep disorders, previous research suggests minimal sleep training in psychology training programs. Sleep education and perceived efficacy in sleep treatment has not been evaluated among practicing psychologists.

Method: Participants were recruited through state, territorial, and provincial psychological associations' email listservs across Canada and the US. Respondents (N=153) completed an online survey collecting information about: 1) the amount and format of formal sleep education across their training; 2) perceived self-efficacy to evaluate and treat sleep disorders and related problems; 3) interest and preferred format for additional sleep education.

Results: Approximately 97% of respondents reported no clinical sleep training in graduate school, internship, and post-doctoral fellowship. Respondents received an average of 16.16 hours of didactic sleep training across education points. They endorsed feeling somewhat to moderately prepared ($M=2.98$ on a five-point Likert scale) to evaluate a patient presenting with sleep disorder symptoms. Regarding specific sleep disorders, psychologists on average felt most prepared to treat insomnia disorders ($M=2.93$). However, most respondents selected "sleep hygiene instructions" as the first-line treatment, which is inconsistent with recommendations regarding insomnia treatment. Respondents (96.7%) reported wanting additional sleep training. They preferred training via in-person seminar (64.1%), online video (51.6%), video-conference (51.0%), interactive website (41.5%), book (41.2%) or another format (4.6%).

Discussion: Despite receiving minimal sleep training, most psychologists felt moderately prepared to evaluate and treat sleep disorders. However, their treatment recommendations for insomnia were not aligned with recommendations to incorporate behavioral approaches, which raises questions about patient outcomes. This study underscores the critical need for sleep training among psychologists and informs next steps to improve sleep treatment competency.

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D341

10:30 AM-11:30 AM

TESTING SUBSTANCE USE AS A MEDIATOR OF STIGMA-HEALTH LINKAGES IN A SAMPLE OF LESBIAN/GAY INDIVIDUALS.

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Compared to heterosexual individuals, lesbian women and gay men experience multi-level health and sociopolitical disparities. According to theories of minority stress and cognitive escape, structural stigma may distally predict health outcomes, and these associations may be mediated by more proximal health behaviors (McKirnan et al., 1996; Meyer, 2003). This study uses 2017 Behavioral Risk Factor Surveillance System data to test a specific example of this mediation model in a large lesbian/gay (LG) sample (total N=3,057). We operationalized structural stigma as the number of LG-protective laws in each of 27 U.S. states (more laws = less structural stigma) using the Movement Advancement Project's (MAP) objective ratings. We predicted these would relate to number of cardiovascular disease (CVD) diagnoses of gay/lesbian individuals in each state. We further predicted that alcohol and tobacco use frequency would each mediate stigma-CVD associations. This model is supported empirically, as evidence suggests LG individuals report relatively high rates of CVD and substance use compared to heterosexual individuals (Conron, Mimiaga, & Landers, 2010; Greenwood & Gruskin, 2007). We examined associations in an aggregated LG sample, and in L and G subsamples, given evidence of differential patterns in health outcomes between L and G individuals (Cochran & Mays, 2017). Mediation models were tested via multinomial logistic regressions, and mediation criteria were based on the work of Baron and Kenny (1986) and Hayes (2009). Spearman correlations and predictor-mediator paths (i.e., a paths) in multinomial logistic regressions revealed that, while structural stigma was associated with smoking in all three subsamples, stigma-alcohol linkages were only significant in females-only and LG-combined samples (versus the males-only sample). However, average binge drinking frequency was higher for males ($p's < .05$). In the LG sample, everyday-smoker status partially mediated the relationship between living in a state with zero or one LG-protective state laws and having multiple CVDs (Sobel's $z = 2.72$ for zero laws, 2.05 for one law; $p < .05$). Key findings are as follows: 1) structural stigma consistently predicts smoking frequency, consistent with prior work (e.g., Hatzenbuehler, Jun, Corliss, & Austin, 2013); 2) smoking frequency may at least somewhat mediate the stigma-CVD relationship; and 3) while binge drinking frequency may be higher on average among gay men, structural stigma may relate to binge drinking more-strongly in lesbian women. Of note, only 27 states collected sexual orientation/gender identity data via the BRFSS in 2017, limiting generalizability. Findings add to literature on stigma and health disparities experienced by LG individuals. Directions for future work include testing sex/gender as a moderator of LG stigma-alcohol linkages and tobacco use as a means of cognitive escape.

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D342

10:30 AM-11:30 AM

THE INTERSECTION OF HIV AND OBESITY: EXAMINING HOW HIV STATUS INFLUENCES WEIGHT STIGMA AMONG ADULTS WITH OBESITY

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Background: Although the prevalence and negative health effects of HIV stigma have been extensively documented among people living with HIV (PLWH), other sources of stigma in this group are understudied. Obesity affects over 25% of PLWH, and while research in the general population identifies weight stigma as a pervasive and harmful form of bias, little research has examined weight stigma or its effects among PLWH and obesity. This study examined how HIV status influences weight stigma in adults with obesity by comparing the prevalence of weight stigma among PLWH and obesity versus adults with obesity only.

Methods: Weight stigma was assessed in PLWH and obesity ($n = 45$; 60% male; 53% white; mean [M] age = 48 ± 12 ; M body mass index [BMI] = 36 ± 7) versus adults with obesity only ($n = 43$; 47% male; 72% white; M age = 44 ± 12 ; M BMI = 37 ± 7). Participants completed electronic self-report surveys assessing internalized weight bias (Weight Bias Internalization Scale; 1–7 scale) and lifetime experiences of weight stigma (Distressing Interpersonal Interactions Scale [DIIS]; 1–4 scale). Lower scores indicate less stigma. The DIIS was also used to assess lifetime experiences of HIV stigma among PLWH.

Results: Models controlled for the effects of age, BMI, gender, race, and socio-economic status. PLWH and obesity reported significantly fewer lifetime weight stigma experiences ($M = 1.5 \pm 0.6$) relative to adults with obesity only ($M = 1.9 \pm 0.8$; $p < 0.05$, $\eta_p^2 = 0.07$). Lifetime weight stigma was reported by 84% of adults with obesity only compared to 56% of PLWH and obesity. Levels of weight stigma reported by PLWH were similar to levels of HIV stigma endorsed in this group, with 58% of PLWH reporting lifetime HIV stigma ($M = 1.6 \pm 0.8$). Although PLWH reported fewer overt weight stigma events, mean levels of internalized weight bias did not differ between PLWH ($M = 3.9 \pm 1.6$) and adults without HIV ($M = 4.5 \pm 1.5$; $p > 0.05$).

Conclusion: PLWH and obesity report experiencing less frequent weight stigma than adults with obesity only. Given historical associations between HIV and “wasting,” having a heavier body weight may be perceived as a protective factor against HIV progression/disclosure and may reduce perceptions of weight stigma. Alternatively, PLWH internalize similar levels of weight bias despite fewer weight stigma experiences, suggesting that weight stigma events may have more potent negative effects on internalization in PLWH. Future studies with larger sample sizes are needed to clarify how HIV and obesity intersect to influence weight stigma among PLWH and obesity.

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D343

10:30 AM-11:30 AM

THE ROLE OF COUPLE RELATIONSHIPS ON PHYSICAL ACTIVITY CHANGE OVER 12 MONTHS AMONG INDIVIDUALS WITH OSTEO-ARTHRITIS.

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Purpose: Evidence for effects of couple relationships on physical activity (PA) is mixed, yet theory suggests the importance of relationship quality and dyadic coping in developing healthy behaviors, especially for individuals with chronic illnesses. We examined the role of relationship factors on the trajectory of PA over 12 months among adults with osteoarthritis (OA).

Methods: We collected longitudinal data from 173 insufficiently active (< 120 minutes of moderate-vigorous PA (MVPA) per week) adults with OA of the knee/hip. All attended an educational class 1 week post-baseline to activate couples' efforts to work together to help the person with OA become more active. We used latent growth curve modeling (LGCM) to test the role of relationship satisfaction and dyadic coping (the belief that both partners are responsible for OA management) on the trajectory of objectively-measured daily MVPA minutes over time: baseline, 2 weeks, and 3, 6, and 12 months. The final LGCM included time-invariant covariates (relationship satisfaction and dyadic coping) controlling for participant characteristics (age, education, income, BMI, and OA symptom severity).

Results: Participants were 65 years old ($SD=9$), 65% female, 86% white, and 59% with at least a 4-year college degree. We first tested a linear growth model with the final timepoint freely estimated. The basic model revealed individual variability in the intercept ($s^2=93.97$, $p < 0.001$) and slope ($s^2=0.10$, $p=0.04$). The rate of change in MVPA was negatively related to participants' baseline MVPA ($r=-0.28$, $p=0.05$). In other words, participants with fewer minutes of MVPA at baseline had more rapid increase in MVPA than other participants. In the model adjusting for time-invariant covariates and participant characteristics, relationship satisfaction ($\beta=-0.98$, $p=0.31$) and dyadic coping ($\beta=-2.38$, $p=0.13$) were not associated with MVPA at baseline. However, greater relationship satisfaction was associated with stronger increases in MVPA over time ($\beta=0.13$, $p=0.04$). Teamwork was not associated with the slope of MVPA ($\beta=-0.11$, $p=0.43$). The model explained 21.3% of the variance in the slope.

Discussion: When working with couples to increase PA in adults with OA, it may be important to develop strategies to help couples with lower relationship satisfaction overcome barriers to increasing PA. Contrary to theory, it may not be necessary that couples view the management of OA as the responsibility of the “team” to see changes in PA.

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D344

10:30 AM-11:30 AM

SOCIODEMOGRAPHIC, PSYCHOSOCIAL, AND BEHAVIORAL CORRELATES OF MEDICAL MISTRUST IN LATINO SEXUAL MINORITY MEN

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Medical mistrust (MM) has been studied in the context of various minority populations, including the Latino community and sexual minority men; however, little research has focused on MM among Latino sexual minority men (LSMM). This study explored the associations of demographic, psychosocial, and behavioral factors with MM among LSMM. 136 LSMM participants, between the ages of 18 to 29, were recruited through Grindr to complete an online survey concerning sexual, psychosocial, and identity topics. Among other measures, participants reported sociodemographic, behavioral, and psychosocial variables. Binary variables were created for sexual orientation (gay vs. bisexual), education (some college vs. below), housing (stable vs. unstable), cigarette use (none vs any) and other substance use (none vs. at least once). A two step hierarchical multiple regression was performed. Sociodemographic variables comprised Step one, including age, ethnicity, citizenship, sexual orientation, education, income, housing stability, and insurance status. Step two included the behavioral and psychosocial variables of machismo and caballerismo traits, depression, alcohol use, cigarette use, and other general substance use. The analyses revealed that in Step one, sexual orientation and unstable housing contributed significantly to the model, $F(8,127) = 4.52, p < .001$, and accounted for 17.3% of the variance in MM when adjusted. Introducing the behavior/psychosocial variables in Step two explained an additional 18.4% of variation in MM ($F(6,121) = 7.01, p < .001$). Within Step two, unstable housing was no longer significant, but sexual orientation did remain significant. The behavior/psychosocial variables of machismo, caballerismo, depression, and substance use significantly contributed to the overall model also, $F(14,121) = 6.36, p < .001$, and explained 35.7% of the variance when adjusted. Among this sample of LSMM, behavioral and psychosocial factors, including machismo and caballerismo, depression, and substance use, were found to account for significantly more variance in MM than commonly used demographic variables. This evidence may further support the notion that cultural factors and personal beliefs play a key role in determining levels of MM, rather than background or demographic characteristics.

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D345

10:30 AM-11:30 AM

TEACHERS' PERSPECTIVES OF HOW ADVERSE CHILDHOOD EXPERIENCES AND TRAUMA-INFORMED STRATEGIES IMPACT STUDENT ENGAGEMENT

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Background: Exposure to Adverse Childhood Experiences (ACES) impact students' development and ability to engage in classroom activities, but research suggests that trauma-informed strategies can improve outcomes related to health, well-being and school success.

Purpose: The purpose of this theory-based exploratory study was to use the Reasoned Action Approach (RAA) to elicit salient beliefs teachers hold about using strategies to increase engagement among students who have experienced trauma.

Methods: Purposive sampling was used to invite twenty-two in-service teachers with experience working with students who have experienced trauma to participate in our study. Of the twelve respondents, nine participants completed at least half of the questions and were included in the final analysis. The nine participants had high levels of experience (6-25 years), and reported working in public schools in suburban (n=5) and urban (n=4) settings, at the elementary (n=2), middle (n=3) and high School (n=4) levels. Each participant was provided with a definition of ACES, and prompted to provide three strategies to increase engagement of these students for each of the four types: behavioral, cognitive, emotional, and social. Then, each participant completed open-ended RAA-based questions for attitudinal, normative, and control beliefs about using the strategies they described. Responses were thematically coded using content analysis.

Results: This data set includes 101 trauma-informed strategies (behavioral=26, cognitive=27, emotional=25, social=24) organized categorically by type of engagement and frequency of responses. Results suggest that promoting engagement is not a homogenous process, as different strategies come to mind when teachers are prompted to think about promoting either behavioral, emotional, cognitive, and social engagement with students who have experienced trauma. Further, teachers' attitudinal beliefs about the advantages of using those strategies to promote engagement are differentiated by type of engagement.

Conclusions: While there is increasing interest in trauma-informed approaches in health and education as a social determinant of health, literature about teachers' perspectives is rare. Findings from this relatively small sample suggest that further interdisciplinary research is needed to determine how trauma-informed strategies are integrated from theory to practice in professional development, interventions, and policy.

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D346

10:30 AM-11:30 AM

PERCEPTIONS OF INTERDISCIPLINARY TEAMWORK AS A PREDICTOR OF PROVIDER BURNOUT

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Background: Provider burnout among healthcare team members has been associated with decreased patient safety and quality of care. Healthcare is increasingly delivered in interdisciplinary teams, and multiple providers working together may have implications on burnout and team effectiveness. Therefore, identifying factors that protect against burnout is important in delivering high-quality healthcare. The purpose of this study was to examine how perceptions of teamwork among members of healthcare teams may impact provider burnout.

Methods: The study was conducted at a large academic medical center (AMC) via electronic survey and was open to all faculty and staff working as part of a clinical team. Participants (N=109) represented a variety of disciplines and roles. Teamwork perception was measured via the Team STEPPS Teamwork Perceptions Questionnaire (T-TPQ), which includes 5 subscales: team structure, leadership, situation monitoring, mutual support, and communication. Burnout was measured using the burnout subscale of the Maslach Burnout Inventory (MBI). Data was analyzed using multiple linear regression.

Results: Results indicated that teamwork perception overall explained 20.5% of the variance in provider burnout and the regression model was a significant predictor of burnout [$F(5,109) = 5.61, p < .01$]. The only subscale that significantly contributed to the model was situation monitoring ($B = .85, p < .05$).

Conclusions: Among a diverse sample of faculty and staff working on clinical teams at an AMC, perception of teamwork was a significant predictor of provider burnout, highlighting the importance of team-level factors in contributing to burnout. In particular, higher levels of situation monitoring (e.g., scanning for safety problems or problems among other team members) predicted higher levels of burnout. It is notable that the relation between this subscale and burnout was in the positive direction, suggesting that when healthcare providers feel a greater burden to monitor the environment and other staff members' behaviors, they may be at greater risk for burnout. Thus, a top-down approach that focuses on team culture factors and alternative ways to monitor safety, rather than placing this burden on individual providers, may be an important approach to reducing burnout.

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D347

10:30 AM-11:30 AM

STRESSING OVER MASCULINITY: THE EFFECT OF PRECARIOUS MANHOOD ON CARDIOVASCULAR REACTIVITY

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Gender often plays a role in appraisal of and physiologically responding to stressors. Among men, increased anxiety-related thoughts typically occur when violating gender norms. These thoughts may arise, because the cultural definition of manhood requires difficult achievements and can be easily lost by violating gender expectations (Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008). How the cardiovascular system responds to gender norm transgressions may inform our understanding of gender disparities in cardiovascular disease. In particular, determining the effects of precarious manhood beliefs (PMB), or the belief that manhood is a status one must earn and continually prove to avoid its loss, on cardiovascular reactivity (CVR) has received little attention. To address whether the culturally shared definition of manhood as precarious influences CVR, men completed a measure of PMB before arriving in lab. In lab, after baseline cardiovascular activity was recorded, men completed a speech task where they either recalled a time they violated gender norms (threat condition) or recalled how they spend a typical day (control condition) while their cardiovascular system was monitored. Men who more strongly endorsed PMB and were in the threat condition, displayed greater cardiac output (CO) reactivity compared to those men in the control condition, $B = .83, SE = .28, p = .02, 95\% CI = [.10, 1.23]$. Further, CO reactivity among men who weakly endorsed PMB was significantly lower compared to those men in the control condition, $B = -.65, SE = .27, p = .02, 95\% CI = [-1.20, -.11]$. Differences in reactivity based on PMB endorsement did not emerge when observing heart rate, blood pressure, total peripheral resistance, pre-ejection period, left ventricular ejection timing, or stroke volume. These results suggest that culture alone does not affect health, rather how much an individual endorses the culture, determines what stressors will impact their cardiovascular system. As patterns of exaggerated or prolonged CVR are linked to worse cardiovascular functioning (Chida & Steptoe, 2010), studying how gender impacts CVR may provide insight on how to improve longevity and wellbeing. Personally endorsing the idea that manhood is precarious may be harmful for cardiovascular health among men insofar as exaggerated CO reactivity is detrimental to cardiovascular functioning.

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D348

10:30 AM–11:30 AM

DETERMINING THE ROLE OF SOCIAL DETERMINANTS OF HEALTH AND HEALTH LITERACY IN ADULTS' MALADAPTIVE EATING BEHAVIORS

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Background: Social determinants of health (SDH), or structural causes and conditions of daily life (e.g., adequate housing and access to food), are related to physical and mental health outcomes. The stress associated with food and housing insecurity may exacerbate poor mental and physical health outcomes via maladaptive coping (e.g., emotional eating). However, health literacy (HL; i.e., the ability to obtain, understand, and utilize health information) skills will dictate how well individuals are able to access and utilize resources to cope with SDH-related stressors. The goal of this study was to examine the relationship between two SDH-related stressors, housing and food insecurity, and poor coping behaviors (i.e., emotional eating) and to determine if these relationships were consistent across individuals with low, medium, and high HL.

Methods: Data (n=590) were collected using Qualtrics Panel and online snowball sampling. Measures included functional HL, mental wellbeing, and poor coping behaviors (i.e., eating when depressed, eating when anxious), and food and housing insecurity. Multiple regressions, controlling for age and gender, were computed to predict the maladaptive eating variables from mental wellbeing, and food and housing insecurity. Regression models were then estimated by HL level.

Results: Food insecurity was positively related to depressed eating in the general sample ($\beta = 0.10$, $p = 0.046$) and in the medium HL ($\beta = 0.15$, $p = 0.036$) sample. Mental wellbeing was inversely related to depressed eating in the general sample ($\beta = -0.22$, $p < 0.001$) and in the low ($\beta = -0.25$, $p = 0.033$), medium ($\beta = -0.22$, $p = 0.001$), and high ($\beta = -0.17$, $p = 0.032$) HL samples. Housing insecurity was positively ($\beta = 0.26$, $p = 0.028$) related to depressed eating in the low HL sample only. Housing insecurity was positively related to anxious eating in the general sample ($\beta = 0.11$, $p = 0.028$) and low HL positively ($\beta = 0.37$, $p = 0.002$) sample. Mental wellbeing was inversely related to anxious eating in the general sample ($\beta = -0.19$, $p < 0.001$) and in the low ($\beta = -0.24$, $p = 0.030$) and medium ($\beta = -0.19$, $p = 0.004$) HL samples. Food insecurity was related to anxious eating in the medium HL sample only ($\beta = 0.17$, $p = 0.017$).

Discussion: The high HL group may have other SDH resources that reduce their risk for food or housing insecurity or high HL may serve as a buffer for poor coping when faced with other SDH stressors. Future studies should utilize a longitudinal design and/or focus on the characteristics within the three HL populations to determine the causal relationship between HL and poor coping. Studies intervening on HL to affect health behavior change should explore the secondary effects of their intervention on coping behaviors.

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D349

10:30 AM–11:30 AM

RACIAL DIFFERENCES IN THEORY-BASED CONSTRUCTS RELATED TO HYPERTENSION MANAGEMENT

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Past research has revealed ethnic and racial differences in the prevalence of hypertension, a major risk for heart disease and stroke, among adults living in the United States. For example, data collected in 2010 by the Centers for Disease Control and Prevention (CDC) indicate higher rates of high blood pressure among adult American Indians (34.5%) compared with Whites (25.7%). More recent data from the National Center for Health Statistics (NCHS) further suggest that hypertension is more prevalent among non-Hispanic Black (40.3%) adults than non-Hispanic White (27.8%) adults. Taken together, these statistics demonstrate racial disparities in prevalence of hypertension, with White adults exhibiting lower rates than other racial minority groups. Despite this, few studies have examined differences in hypertension management among racial groups. Drawing from an expanded Theory of Planned Behavior (TPB) including anticipated emotional responses of pride and regret, the current study examines the social psychological processes involved in efforts to reduce or maintain blood pressure, as well as the theory-based constructs that may be instrumental in driving these efforts, in hypertensive patients of three racial groups: Whites (n=415), African Americans (n=395), and American Indians (n=137). As part of a larger intervention study, participants (total N=947) completed a baseline survey assessing attitudes, norms, perceived behavioral control, anticipated emotions, intentions, and past efforts to control blood pressure. Cross group analyses revealed interesting differences in the associations among theoretical constructs between races. For example, the path from past efforts to perceived behavioral control was positive and significant for both Black and Native American participants, but the coefficient was smaller for Black participants ($\beta = .161$, $p < .01$) than Native American participants ($\beta = .368$, $p < .001$). In addition, the path from past efforts to anticipated pride was significant for White participants ($\beta = .331$, $p < .001$) but not for Black participants ($\beta = .062$, ns). Findings such as these have the potential to inform the generalization of theory across racial groups and targeted intervention approaches.

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D350

10:30 AM-11:30 AM

THE LINK BETWEEN ADVERSE CHILDHOOD EXPERIENCES WITH PHYSICAL, BEHAVIORAL, AND MENTAL HEALTH RISKS IN YOUNG ADULTHOOD

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Introduction: Seminal work by Felitti et al. (1998) demonstrated a strong, graded relationship between exposure to childhood abuse and household dysfunction with health status in adulthood. The present study examined these relationships among young adults to better characterize the developmental timing of health problems related to adverse childhood experiences (ACE) exposure.

Methods: A general health questionnaire that included items on ACE was administered to young adults (ages 18-29) at universities in California (n=3,880), Minnesota (n=7,708), and Texas (n=451) from 2017-2018. Seven categories of ACE were included: psychological, physical, or sexual abuse; violence between parents; or living with household members who were substance misusers, mentally ill, or ever imprisoned. Health indicators in young adulthood were regressed on ACE categories of 0 (referent), 1, 2, 3, 4, or more using logistic regression controlling for age, gender, race/ethnicity, and site.

Results: Approximately 51.7% of the sample reported ACE exposure with a significantly higher rate among Texas participants ($p < 0.001$). The seven categories of ACE were strongly interrelated ($p < 0.001$) and tended to cluster with 18-27% of exposed participants reporting two ACE and 39-78% reporting 3 or more ACE. We observed a dose-response relationship between categories of ACE with physical and behavioral health indicators (e.g., obesity, sleep, cigarette use, e-cigarette use, drinking and driving, AORs: 1.38-3.59) along with mental health indicators (e.g., depression diagnosis, suicidal ideation and attempt, non-suicidal self-injury, AORs: 1.29-4.34).

Conclusions: The graded relationship between ACE exposure and health status in young adulthood in the present study reinforces the need to raise awareness about the health consequences of early trauma exposure and provide prevention programs that help young adults cope with stressors that increase risk for premature mortality and morbidity in adulthood. These findings point to the potential benefits of leveraging this critical window of opportunity for intervention. In particular, the role that campus communities could take in developing initiatives that address trauma related health issues.

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D351

10:30 AM-11:30 AM

THE ROLE OF PERCEIVED HETEROSEXISM IN POSTTRAUMATIC STRESS DISORDER SEVERITY AMONG TRAUMA EXPOSED SEXUAL MINORITY INDIVIDUALS

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Sexual minority (SM) (i.e., gay, bisexual, lesbian, pansexual, queer) individuals have a significantly greater lifetime risk of developing posttraumatic stress disorder (PTSD) than do heterosexual individuals. Explanatory theories of PTSD provide limited insight into the uneven distribution of PTSD across social groups, nor do they account for contexts in which ongoing exposure to identity-based threats may influence PTSD symptoms. Minority stress theory proposes that SM individuals' disproportionate exposure to stigma-related SM stress contributes to health disparities, including elevated PTSD risk. Yet, important questions remain about the role of SM stress in PTSD etiology and persistence, as well as risk mechanisms accounting for interindividual differences. This ongoing study employs structured PTSD assessments and a micro-longitudinal 30-day daily diary assessment to investigate the unique and interactive effects of traumatic stress and SM stress on PTSD symptoms in a diverse sample of trauma-exposed SM individuals. Specifically, we will test the following hypotheses: 1) Exposure to daily SM stress will be positively associated with greater weekly PTSD symptom severity; and 2) Baseline exposure to sexual identity-based stressful and/or potentially traumatic life events will moderate the relationship between daily SM stress and PTSD symptom severity. Recruitment and data collection is ongoing. Currently, 39 eligible participants (61.5% cisgender female, $M_{age} = 23.4$ [$SD = 10.4$] years, 48.7% White, 41% bisexual) have completed the baseline assessment; 87.2% ($n = 34$) of enrolled participants have completed the daily diary portion of the study (30-day survey completion rate: 77.5%). Among enrolled participants, 33.3% ($n = 13$) met DSM-5 criteria for PTSD, 46.2% ($n = 18$) reported a Criterion A event related to their SM identity, and 84.6% ($n = 33$) reported lifetime exposure to a SM identity-related stressful life event at baseline. Hypotheses will be tested with multilevel models that control for comorbid psychiatric disorders and other baseline characteristics. Full sample descriptives and main analyses will be presented. Final results from the study will have implications for the development of clinical and community-based interventions for trauma-exposed SM individuals.

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D352

10:30 AM-11:30 AM

U.S. PHYSICIANS' INTRINSIC ASPIRATIONS, PSYCHOLOGICAL NEED SATISFACTION, AND OCCUPATIONAL HEALTH

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Numerous studies have documented deteriorating occupational health among practicing physicians. This trend poses a serious risk not only for physicians but also for the many patients under their care. One protective factor seems to involve the quality of physicians' motivation. When physicians are more autonomously motivated, they tend to experience better occupational health. However, few studies have identified antecedent factors that support physicians' autonomous motivation. To identify and model potential antecedents of physicians' autonomous motivation and occupational health, the current study assessed intrinsic aspirations, need satisfaction at work, and individual characteristics. The hypotheses were tested in a sample of 3,589 U.S. practicing physicians. Structural equation modeling was used to model paths linking physicians' intrinsic aspirations to occupational health, as mediated by need satisfaction and motivation at work. The results showed that physicians who endorsed intrinsic aspirations more strongly also reported better occupational health. This association was mediated by physicians' psychological need satisfaction and autonomous motivation. Selecting training candidates who endorse and otherwise evidence intrinsic aspirations, and fostering these aspirations within and outside of work, may protect physicians' occupational health. Further, system-level interventions that support intrinsic aspirations, need satisfaction, and autonomous motivation may also benefit the well-being of physicians and their patients.

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D353

10:30 AM–11:30 AM

ASSESSING THE NEED FOR AND ATTITUDES TOWARD AN MHEALTH STRESS REDUCTION PROGRAM FOR CAREGIVERS OF KIDNEY TRANSPLANT RECIPIENTS*

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Background: Caregivers play a crucial role in kidney transplant recipients' (KTR) long-term graft survival, providing physical and emotional support long after initial surgery recovery. Research involving caregivers of chronically ill and other types of solid organ transplant patients indicates a common pattern of caregiving strain characterized by increased general stress, fatigue, and sleep disturbance. Research is scarce regarding the physical and psychological health of caregivers of KTRs (KTR-C). The purpose of this study was to determine levels of stress, sleep quality, caregiver strain, and caregiver demographics of KTR-Cs. We also conducted an exploratory analysis to determine how perceived stress and strain relate to other physical and mental health markers of KTR-Cs.

Methods: A survey was adapted from previously validated questionnaires and administered to KTR-Cs at MUSC's kidney transplant clinic from May–August 2019. Demographics and caregiver information (hours/week, total months since transplant, etc.) were assessed alongside the Perceived Stress Scale, Caregiver Strain Index, and the Pittsburgh Sleep Quality Index. Lastly, we assessed the KTR-Cs' general interest, perceived need, and desire to participate in a previously validated smartphone stress reduction app (Tension Tamer: TT).

Results: Of 97 KTR-Cs approached, 94.8% agreed to participate. Mean age was 52.4 yrs with 72.6% female and 56.6% African American (43.4% white). Respondents averaged 19.4 ± 11.7 hours of caregiving/week, with 60% working full or part time jobs. Using established cut-offs, 87.7% self-reported high perceived stress, 64.5% indicated poor sleep, and 32.3% had high degree of caregiver strain. The top two physical health issues indicated were hypertension (37.6%) and diabetes (32.3%). Of those with elevated stress and poor sleep, 60% indicated need for and interest in the TT stress reduction program if offered for free. Further, 51% and 65.6% of diabetics and hypertensives, respectively, indicated enthusiasm for participation in the Tamer program. Of the subset who viewed a TT video demo, 100% believe TT would reduce their perceived stress and well-being.

Conclusion: KTR-Cs report similar levels of caregiver strain, high stress, sleep disturbance and physical health management issues as other caregivers. With over half indicating interest in receiving assistance related to stress management, implemented a stress management program tailored to KTR-Cs may be warranted.

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10:30 AM–11:30 AM

MINORITY STRESS AND SOCIAL SUPPORT AMONG SEXUAL MINORITY WOMEN: ASSOCIATIONS WITH PSYCHOLOGICAL DISTRESS

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Sexual minority women are at heightened risk for psychological distress and poor health outcomes. Experiencing social stigma based on sexuality, or minority stress, may lead to elevated distress and contribute to these outcomes, necessitating research on protective factors for sexual minority women. Social support promotes well-being in this population, but little research has examined it as a buffer against minority stress in daily life. This secondary analysis of an Ecological Momentary Assessment (EMA) study examined 1) whether sexual minority stressors predicted greater distress in daily life, 2) whether social support predicted less distress in daily life, and 3) whether social support buffered the impact of experiencing heterosexist stigma on distress. Participants were sexual minority women with overweight or obese BMIs (n=55; 55% Caucasian; 62% bisexual; mean age = 25 ± 9). Lifetime experiences of heterosexist stigma (e.g., discrimination), internalized stigma (i.e., internalized homophobia, sexuality concealment), perceived stress, depression symptoms, general social support, and sexuality-specific social support were self-reported at baseline. Current levels of stress and negative emotion were then self-reported via a smartphone application five times daily over a five-day monitoring period. Lifetime experiences of heterosexist stigma predicted greater mean stress ($p < .05$) and negative emotion ($p < .05$) over the course of the EMA period. Internalized stigma was unrelated to distress outcomes. High levels of general social support predicted lower levels of daily stress ($p < .05$) and negative emotion ($p < .05$) during the EMA period, but sexuality-specific social support did not. Social support did not interact with experiencing heterosexist stigma to predict distress levels in daily life. Models controlled for demographics, baseline stress and depression, and EMA completion rate. Exposure to sexual minority stress over time may be related to heightened psychological distress in daily life among sexual minority women. In line with prior research, general social support strongly predicted lower distress. Future studies should examine additional factors and processes that may buffer the negative psychological effects of stigma in sexual minority women, as social support did not interact with stigma to predict distress outcomes.

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D355

10:30 AM-11:30 AM

RISK FACTORS ASSOCIATED WITH ENGAGEMENT IN PASSIVE SENSING AND EMA AMONG RURAL ADOLESCENT CANNABIS USERS

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Introduction: Mobile health applications that use passive sensing have been elevated to the forefront of research efforts for adolescents experiencing various health concerns. However, the acceptability of using apps to collect data in cannabis using teens has been largely unstudied. In this pilot study, ecological momentary assessment (EMA) and passive sensing data via a mobile health app and wristband were collected. Then risk factors that were associated with acceptability, feasibility, and adherence for collecting data through passive sensing and EMA were explored.

Methods: Adolescents (n=13, 46% female, aged 15-18) who endorsed regular cannabis use in the past 30 days participated in a study where they were asked to wear sensor wristbands (heart rate, accelerometer, electrodermal activity), install a data collection mobile health app on their personal phone (ambient sound/light, phone use, GPS, accelerometer), and complete five EMA entries per day. Participants reported on daily affect, daily craving, and daily substance use via EMA. Physiological data were collected through wristbands and contextual data through smartphones.

Results: Correlations indicate that teens with more severe cannabis cravings were more likely to adhere to the passive sensing app ($r=.65$) compared to the wristband and EMA ($.22 < r < .29$). Past cannabis use disorder (CUD) was also associated with better app adherence and EMA ($.60 < r < .62$) but was not associated with wristband adherence ($r=.32$). Teens who endorsed a higher level of parental monitoring were less likely to adhere to the passive sensing app, EMA, and wristband ($-.03 < r < .29$). Additionally, teens who reported greater emotion dysregulation were more likely to adhere to the app ($r=.49$) but were less likely to complete EMA prompts and wear the wristband ($-.18 < r < .37$).

Conclusion: Participants with greater cannabis use cravings, past CUD, and greater emotion dysregulation were more likely to adhere to the passive sensing app on their personal phone compared to wearing the wristband and completing EMA prompts. Additionally, participants who endorsed higher level of parental monitoring were less likely to use any of the data collection methods compared to those who endorsed lower levels of parental monitoring. Future research should further examine integrating passive sensing on personal phones for mHealth intervention for adolescent cannabis use and examine how to boost adherence where wristband sensors or EMA might be required.

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10:30 AM-11:30 AM

SELF-REPORTED USE OF ALCOHOL AND NICOTINE AMONG WOMEN BEFORE AND DURING PREGNANCY, 2009-2017

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Objective: To examine trends in the frequency of self-reported alcohol and nicotine use among pregnant women in the year before and during pregnancy.

Methods: Cross-sectional study of 361,093 pregnancies from 2009-2017 among women who completed a self-administered questionnaire on frequency of substance use in the year before and during pregnancy at their first prenatal visit (at ~8 weeks gestation) in Kaiser Permanente Northern California. The annual prevalence of self-reported daily, weekly, and monthly alcohol and nicotine use was estimated using Poisson regression with a log link function, adjusting for socio-demographics.

Results: The sample was 64% non-White with a mean age of 30.1 (SD=5.6). Overall, 43.9% of women reported \leq monthly, 20.0% weekly, and 1.6% daily alcohol use in the year before pregnancy; while 3.4% reported \leq monthly, 1.5% weekly, and 5.3% daily nicotine use in the year before pregnancy. From 2009-2017, there was a significant increase in the adjusted prevalence of any alcohol use in the year before pregnancy (63% to 66%), with significant increases in weekly use and significant decreases in \leq monthly use. The adjusted prevalence of any nicotine use in the year before pregnancy decreased significantly (12.6% to 7.7%), with significant decreases in annual rates of \leq monthly, weekly and daily nicotine use. Overall, 7.6% of women reported \leq monthly, 1.6% weekly, and 0.2% daily alcohol use during pregnancy, and 0.9% of women reported \leq monthly, 0.6% weekly, and 1.4% daily nicotine use during pregnancy. From 2009-2017 there were significant decreases in the adjusted prevalence of any prenatal alcohol (11.5% to 8.8%) and prenatal nicotine use (4.3% to 2.0%) (P s < .0001), with significant decreases in annual rates of change in \leq monthly, weekly, and daily use of both substances.

Limitations: Prenatal substance use was based on self-reported use at the initial prenatal visit (at ~8 weeks gestation) and does not reflect continued use during pregnancy. Further, we were unable to differentiate whether substance use during pregnancy occurred before or after women realized they were pregnant.

Conclusions: Despite increases in the prevalence of self-reported alcohol use in the year prior to pregnancy, use of nicotine decreased significantly in the year prior to pregnancy. The frequency of self-reported alcohol and nicotine use during pregnancy have decreased over time among pregnant women in Northern California.

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D357

10:30 AM–11:30 AM

PREDICTORS OF BINGE DRINKING AND MENTAL HEALTH IN GREEK LIFE: A STUDY ON A COLLEGE POPULATION

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Introduction: High stress can lead to binge drinking as a coping mechanism while in college. Binge drinking is commonplace on college campuses, with 34.8% engaging in binge drinking at least once, a higher rate when compared to non-college attending peers. Members of the Greek community binge at higher rates than non-Greek affiliated students. It is hypothesized that binge drinking for Greek members is associated with environmental settings, peer consumption, mental health and mediated by coping mechanisms due to life stressors.

Methods: A random sample of N=549 was taken at an ethnically diverse private southern California university. Primary predictive measures were demographics, drinking behaviors (e.g. “Did you drink with a friend?” or “Did you drink at a Greek party?”) and the last drinking event was measured with participation in Greek life. Secondary predictors included mental health outcomes such as depression, anxiety, and social interaction anxiety. Descriptive frequencies, crosstabulations, and multiple logistic regression were used for analysis.

Results: Results indicated that N=396 (73%) of students did have a binge-drinking episode in the past 30-days, with an average of 3.5 days total. Demographics included N=330 (60.1%) females and N=194 (35.3%) males, N=76 (14.42%) participated in Greek life, with N=286 (52.1%) having a GPA of 3.6 or higher. Drinking with friends had the highest incidence of binge drinking N=355 (67.36%). Logistic regression models assessed the association between Greek life, mental health and binge drinking (RR= 10.70 95% CI= 5.20, 22.00) were significantly associated. Ordinal logistical models assessed potential effect modification by Greek life and mental health. Depression (OR= 1.29, 95% CI= 1.22, 1.35), anxiety (OR=1.52 95% CI= 1.4, 1.64) and social interaction anxiety (OR=1.01 95% CI= 1.00, 1.02) were significantly associated.

Discussion: College campuses would benefit from creating more regulations in Greek life and facilitating healthy habits as coping mechanisms from college stressors. Prevention programming can be considered in relation to mental health.

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D358

10:30 AM–11:30 AM

IMPAIRED CONTROL IN BINGE DRINKING USING SMARTPHONE ECOLOGICAL MOMENTARY ASSESSMENT

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As of 2010, excess alcohol consumption cost the US approximately \$249 billion (\$2.05 per drink) including lost productivity, healthcare, and criminal justice costs. Binge drinking accounts for 77% of these costs. In order to understand alcohol use disorders and develop treatment, insights into psychological processes underlying drinking are needed. Attempts to limit number of drinks or stop drinking altogether in a drinking episode are not well understood. We examined impaired control and drinking using smartphone EMA captured in the field.

Heavy drinking males and females (21+ and 15+ drinks/week respectively, N=16) who were undergoing a lab-based study of impaired control over drinking completed 2-6 weeks of EMA across 4 daily random assessments. Participants completed 954 assessments (77.64% of the expected number) and the mean number of assessments was 60.56 (30.16). Drinking goal, craving, consumption quantity, motivation to stop drinking, and impaired control measures were collected.

Participants reported being motivated to cut down or avoid drinking on 38.58% of assessments. There was no evidence for moderation of an association by motivation to cut back/avoid drinking for the next 24 hours. As alcohol craving increased, drinking before the next assessment increased ($p = .007$). As motivation to stop drinking increased, drinking before the next assessment decreased ($p = .026$). Finally, when participants indicated they had a goal of reducing/stopping drinking in the next 24 hours, drinking before the next assessment decreased ($p = .022$). This is the first study to report a within-subject association between motivation and subsequent drinking during EMA.

This study suggests that EMA can be effectively administered in the field in binge drinkers undergoing lab-based studies of impaired control over drinking. We found that motivation and goals of reducing/stopping drinking are associated with subsequent reduced drinking, while craving for alcohol is associated with increased subsequent drinking. EMA assessed in the field can provide information on recent impaired control episodes and could be used to evaluate if impaired control is an effective target for drinking interventions.

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D359

10:30 AM-11:30 AM

RACIAL/ETHNIC AND GENDER DIFFERENCES IN NONMEDICAL STEROIDS USE IN ADOLESCENTS: A NATIONALLY REPRESENTATIVE TREND ANALYSIS

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Backgrounds: Nonmedical use of steroids (NMUS) could result in addiction and severe side effects including reproductive health problems, heart diseases, and liver or kidney failure. Previous studies have shown that adolescents reported high rates of lifetime NMUS than adults (1.3% vs. 0.5%). Additionally, there are racial/ethnic and gender differences in the rate of lifetime NMUS. However, limited research investigated the trend of NMUS among adolescents. Little is known about the plausible racial/ethnic and gender differences in this trend. The current study aims to investigate the racial/ethnic and gender differences in the trend of NMUS among adolescent. Such information can shed light on the importance of exploring determinants of NMUS and inform health professionals designing tailored interventions to reduce NMUS among adolescents.

Methods: Data were derived from the 1999-2017 National Youth Risk Behavior Survey, which involves school-based surveys that generated a nationally-representative sample of 9th-12th grade students in the United States. Students self-reported lifetime NMUS. Logistic regression analyses used to explore the trend of NMUS by racial/ethnic and gender groups after adjusting for grade levels. Linear and quadratic changes were examined.

Results: The prevalence of lifetime NMUS has increased from 1999 to 2003 (from 2.58% to 5.12%), but decreased since 2003 (from 5.12% to 2.98%). White females (OR=0.97, $p < 0.001$), White males (OR=0.98, $p < 0.01$), and Hispanic males (OR=0.99, $p < 0.01$) had decreased trends of NMUS. Both Black females (OR=1.08, $p < 0.01$) and males (OR=1.03, $p=0.04$) had increased trends of lifetime NMUS. No significant trends were found in other racial/ethnic groups.

Conclusion: Racial/ethnic and gender disparities were found in the trend of nonmedical steroids use among adolescents. More attention should be paid to Black males and females. Further studies focusing on investigating the determinants of NMUS are needed. Tailored interventions for specific racial/ethnic and gender subgroups may be more effective in reducing the nonmedical steroids use.

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10:30 AM-11:30 AM

DAILY PREDICTORS OF MEANINGFULNESS AMONG OPIOID PATIENTS: ASSOCIATIONS WITH AFFECT, SOCIAL INTERACTIONS, AND 12-STEP SUPPORT

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Recovery from drug addiction goes beyond achieving and sustaining abstinence to include improved meaningfulness and quality of life. However, research on factors related to the development of a sense of meaningfulness during recovery from opioid use disorder are lacking. We present a study using Ecological Momentary Assessment (EMA) to examine the relationship of positive and negative affect, positive and negative social interactions, and 12-step meeting support with self-reported meaningfulness.

Participants ($n = 73$, 77% Male) were patients at a residential drug and alcohol treatment facility. They were invited to complete smartphone-based surveys four times per day for up to 12 consecutive days. Positive and negative affect were assessed with eight items each, and items of the same valence were averaged to create daily positive and negative affect scores for each individual. Positive and negative social interactions were measured with five binary items each that assessed whether negative (e.g., had a disagreement) and positive (e.g., received a compliment) interactions occurred, and summed to indicate the total number of positive and negative interactions per day for each individual. Twelve-step support was measured with three items (e.g., "How supportive did you find the meeting?"), which were averaged to indicate daily levels of 12-step support for each individual. Meaning was measured with four items (e.g., "Overall, how meaningful was your day?"), which were averaged to indicate daily levels of meaning for each individual.

We used multilevel modeling to assess whether each daily predictor was associated with meaningfulness after controlling for prior day meaningfulness, age, and gender. The final model revealed an interaction between daily positive affect and negative social interactions. Positive affect protected against the effects of negative social interactions, such that meaningfulness was lower on days with more negative social experiences only if positive affect was also low. Further, daily 12-step support moderated the associations between both positive social interactions and positive affect variability with meaningfulness. Experiencing higher-than-usual 12-step meeting supportiveness reduced within-day linkages between having fewer positive social interactions and higher-than-usual positive affect variability and individuals' sense of meaningfulness that day.

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10:30 AM–11:30 AM

DRINKING IDENTITY ENDORSEMENT AND THOUGHT FREQUENCY, AND LONGITUDINAL ASSOCIATIONS WITH PROBLEMATIC ALCOHOL CONSUMPTION

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Research suggests that drinking identity endorsement (associating oneself with alcohol, drinking alcohol, or drinkers) and drinking identity thought frequency (frequency of thinking about one's drinking identity, a dimension of drinking identity investment; investment represents disproportionate allocation of cognitive and behavioral resources to maintain one's drinking identity) are social cognitions that can help explain problematic alcohol consumption. We extended this research in two ways. First, we evaluated whether endorsement and thought frequency comprised a latent drinking identity factor. Second, we tested whether there is a reciprocal, positive relationship between drinking identity and problematic alcohol consumption over time. Data were collected from college graduates who began the study in their senior year of college and, at that time, exhibited hazardous drinking (scores ≥ 8 on the Alcohol Use Disorder Identification Test [AUDIT]) (N=422; age M=21.5, 59% female, 61% White). Participants completed self-report measures of drinking frequency (# drinks/week), hazardous drinking (AUDIT), drinking identity endorsement, and absolute and relative drinking identity thought frequency at graduation and again 9 months later. Confirmatory factor analysis indicated that endorsement and thought frequency comprised a latent drinking identity factor at both time points (T1 CFI=0.996, TLI=0.991, RMSEA=0.039, 95% CI [0.000, 0.068]) (T2 CFI=0.988, TLI=0.968, RMSEA=0.080, 95% CI [0.000, 0.150]). Controlling for gender, structural equation modeling indicated that drinking identity was concurrently associated with drinking frequency (T1 $b=0.35$, $p<.001$; T2 $b=0.42$, $p<.001$) and hazardous drinking (T1 $b=0.23$, $p<.001$; T2 $b=0.29$, $p<.001$). Finally, across the 9 months, cross-lagged structural equation modeling indicated that drinking identity predicted increases in drinking frequency ($b=0.10$, $p=.025$) and hazardous drinking ($b=0.10$, $p<.001$) whereas change in drinking identity was predicted by neither drinking frequency ($b=0.00$, $p=.347$) nor hazardous drinking ($b=0.02$, $p=.089$). It is important to assess both endorsement and thought frequency when examining the relationship between drinking identity and problematic alcohol consumption. Moreover, both endorsement and thought frequency are potential targets for curbing problematic alcohol consumption. Further investigation is needed to identify sources of drinking identity.

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10:30 AM–11:30 AM

LONGITUDINAL COURSE OF SUBSTANCE USE DISORDER DIAGNOSES STRADDLING A NEW DIABETES DIAGNOSIS

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Background: In the context of diabetes, a co-occurring substance use disorder (SUD) can disrupt behavioral and medical aspects of self-care and disease management. SUDs increase risk for morbidity and mortality in the context of diabetes, making it critical to diagnose and treat co-occurring SUD in a timely manner.

Purpose: This study analyzed patient factors associated with SUD diagnoses before and after new-onset diabetes, data which could inform care management for diabetes but has sparsely been reported.

Methods: We analyzed medical record data to identify a nationwide cohort of Veterans Health Administration (VA) patients with new-onset diabetes in 2008 (N = 155,145) and a SUD diagnosis during 2006–2010 (N = 18,227). SUD diagnoses were made by clinicians during health care provided in VA's integrated medical and behavioral health care system. Patients were categorized into 3 groups: "SUD-resolved" if a clinician made a SUD diagnosis before but not after diabetes onset; "SUD-new" if a clinician made a SUD diagnosis after but not before diabetes onset; and "SUD-ongoing" if a clinician made a SUD diagnosis both before and after diabetes onset. Multinomial regression tested associations between age, sex, or race/ethnicity and group membership using SUD-ongoing as the reference group.

Results: Alcohol (5.3%), cocaine (1.4%), and opiate use disorders (0.6%) were diagnosed most often in the 2 years before new-onset diabetes. Rates of all SUDs increased in the 2 years after new-onset diabetes. In multinomial regression, men were less likely to be in the SUD-resolved group (Odds Ratio [OR] = 0.73, $p<.05$), compared to women. Compared to white patients, black patients were less likely to be in the SUD-resolved (OR = 0.83, $p<.05$) or SUD-new groups (OR = 0.70, $p<.05$) relative to being in the SUD-ongoing group.

Conclusions: Substance use disorders are diagnosed at higher rates in the years following new-onset diabetes, compared to the time immediately before diabetes onsets. A patient's new diabetes diagnosis may be a ripe opportunity to engage patients in SUD treatment when clinically indicated to improve their chances for living healthily with diabetes. However, men appear less likely than women, and black patients appear less likely than white patients, to have SUD resolve in the years straddling their new-onset diabetes diagnosis. Additional study is warranted on whether associations are related to patient preferences, disparities, quality of care, or all the above.

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10:30 AM-11:30 AM

THE EFFECT OF MOMENTARY AFFECT ON SUBSTANCE USE AMONG YOUNG ADULTS WHO EXPERIENCE HOMELESSNESS

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Introduction: To date, little is known about the momentary patterns and predictors of substance use among young adults who experience homelessness. In order to enhance understanding of substance use patterns, smartphone-based ecological momentary assessments (EMA), or short mobile surveys, were utilized to examine the real-time association between affect and substance use.

Methods: Two hundred and thirty-four young adults aged 18-27 who were either residing in supportive housing programs ($n=126$) or were homeless ($n=111$) were assessed for 7 days and completed a baseline survey as well as up to 8 EMA surveys per day. During each EMA survey, which is administered once every two hours, participants reported use of substances as well as current affect. Substance use is defined as any use of alcohol or cannabis. Affective states were separated into positive (i.e., happy, calm, excited) and negative scales (i.e., stressed, irritated, sad) based on exploratory factor analysis. Separate mixed-effects logistic regressions were completed to evaluate whether positive or negative affect predicted lead, current and lagged substance use. Covariates included study day (1-7), age, and housing status.

Results: Participants were on average 22 years old. Approximately 48% of participants reported consuming alcohol and 58% reported using cannabis during the 30 days prior to baseline. Alcohol or cannabis was endorsed on 17% of the 6,600 completed EMAs. Based on results, there were no lead effect for either positive or negative affect on substance use. A significant lagged effect of negative affect on subsequent substance use was found as well as a significant current effect of positive affect on substance use. Within individuals, lower negative affect than one's average was associated with greater odds of substance use on the next EMA survey ($OR = 0.880, p < 0.05$). In addition, greater positive affect than one's typical was associated with substance use on the current EMA ($OR = 1.407, p < 0.05$).

Conclusions: Results highlight the importance of momentary affect as a predictor of substance use among young adults who experience homelessness. These findings suggest that alcohol and cannabis may be used to enhance mood or experiences rather than as a coping mechanism. Nonetheless, more research is needed to determine other predictors of momentary substance use including presence of risky peers or proximity to outlets that sell substances.

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D364

10:30 AM-11:30 AM

PERCEIVED RISK PREDICTS OPIOID MISUSE INTENTIONS AMONG HIGH SENSATION SEEKING YOUTH AND YOUTH WHO HAVE MISUSED

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Understanding how perceived risk of harm is related to opioid misuse is important for appropriately targeting both individual and population level interventions. While substance use during adolescence and young adulthood is generally more prevalent among youth who perceive lower risk from substance use, prior research has found that for high sensation seeking college students, perceived risk was unrelated to prescription opioid misuse. The objective of the present study was to test whether sensation seeking personality and/or prior opioid misuse moderate the association between perceived risk of harm and intentions to misuse prescription opioids in a nationally representative sample of youth.

Data were collected in spring 2018 as part of the Truth Longitudinal Cohort, a nationally representative sample of youth ages 15-24 ($N=12,374$). Participants self-reported demographic and sensation seeking characteristics, lifetime prescription opioid misuse, perceived risk of harm of misusing prescription opioids once or twice, and intentions to misuse prescription opioids. Logistic regression models with intentions to misuse as the outcome tested the effect of sensation seeking, prior misuse, perceived risk of harm and the interaction of perceived risk with the other predictors.

As expected, higher odds of intention to misuse were associated with higher sensation seeking scores ($OR=1.48, CI=1.40-1.56$), but there was no evidence for an interaction between sensation seeking and perceived risk ($OR=1.00$). Overall, lower perceived risk and prior misuse were each associated with higher odds of intention to misuse and there was a significant interaction between these measures ($OR=1.44, CI=1.51-1.80$). The effect of perceived risk was stronger among those who had misused in the past ($OR=3.53, CI=2.90-4.30$) than among those who had not misused ($OR=2.45, CI=2.21-2.72$).

Findings do not support smaller effects of perceived risk of harm among high sensation seeking youth on intentions to misuse opioids. In fact, the effect of perceived risk on intentions to misuse was stronger among those who had misused in the past than those who had not misused. Perceived risk of harm among those with experience with misuse may reflect positive or negative misuse experiences, which may have shaped their future intentions to misuse. Longitudinal research is needed to better understand the relationship between risk perceptions and prescription opioid misuse.

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10:30 AM-11:30 AM

USE OF CIGARETTES AND E-CIGARETTES FOR WEIGHT CONTROL AMONG YOUNG ADULTS WITH OVERWEIGHT OR OBESITY

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Introduction: The uptake of e-cigarettes and resulting health-related concerns are a public health priority. Data suggest that cigarettes may be used to control weight and dietary intake but less is known about perceptions related to e-cigarettes. The current analysis sought to examine these perceptions and behaviors among a subset of young adults with overweight and obesity in a weight loss trial.

Methods: Young adults with overweight/obesity (n=459; 78.6% female, mean \pm SD: age 23.3 ± 4.4 years, weight: 86.6 ± 15.6 kg, body mass index [BMI] 31.2 ± 4.4 kg/m²) were recruited from two sites and randomly assigned to receive one of three digitally delivered weight management interventions. At baseline, participants completed questions related to their cigarette and e-cigarette use, weight-related behaviors (i.e., diet and moderate-to-vigorous physical activity [MVPA]), and perceptions about e-cigarette use for weight control.

Results: Among the randomized participants, 39% reported having ever smoked traditional cigarettes, 17.8% of participants reported having ever used e-cigarettes, and 14.4% had ever tried both cigarettes and e-cigarettes. Neither cigarette nor e-cigarette use differed by baseline BMI (overweight/obese); however, participants with obesity (BMI ≥ 30) were more likely to report e-cigarettes having tasty flavors than participants with overweight. Among ever e-cigarette users (n=81), 76.5% reported a perception of e-cigarettes coming in tasty flavors compared to 55% of the never users. The diet quality of the participants who had ever used e-cigarettes was lower than the diet quality of the never users but total caloric intake was not different and there were no differences in the perception of e-cigarettes for weight control or physical activity. Among dual users of e-cigarettes and cigarettes (n=66), very few reported using traditional cigarettes for weight control but about half reported using e-cigarettes for weight control. Among the 35 users who reported using e-cigarettes for weight control, weight-related behaviors differed (i.e., on average approximately 12 minutes of MVPA per day less, and 400 fewer calories [p 's $< .05$]) compared with participants who did not report using them for weight control.

Conclusion: Our results suggest that there are differences in the perceptions of how traditional cigarettes and e-cigarettes affect weight. Further research is needed to understand the impact of the perception of e-cigarettes for weight control among young adults.

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10:30 AM-11:30 AM

THE RELATIONSHIP BETWEEN DISPLACEMENT IMPOSITION AND READINESS TO QUIT SMOKING BY CIGARETTE AND E-CIG USE STATUS

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Background: While public smoking bans are becoming more common, the impact of these policies on cigarette and electronic cigarette (e-cig) users is not fully understood. Smoking bans have demonstrated a reduction in smoking rates in some areas; however, overall *displacement imposition*, a measure of users' cognitive and affective reactions to being displaced to smoke, and whether this burden may differentially impact cigarette users vs. e-cig users' readiness to quit smoking, have not yet been studied (Lechner et al., 2012). The aim of this study was to better understand the relationship between displacement imposition and readiness to quit smoking, and how this relationship may differ between cigarette and e-cig users.

Method: Participants (N=297; 121 cigarette users, 176 e-cig users) were recruited from a large, Southern Plains university. The sample was female (51.6%), Caucasian (71.2%), and undergraduate students (86.7%) between the ages of 18-25 (81.1%). Participants completed online questionnaires that assessed demographics, cigarette and e-cig use frequency, and readiness to quit smoking.

Results: Moderation analyses using bootstrapping (PROCESS; Hayes, 2013) indicated significant main effects for both cigarette vs. e-cig use ($b = 1.07$, $t = 1.99$, $p = .0473$, 95% CI [.01, 2.13] and displacement imposition ($b = .02$, $t = 3.81$, $p = .0002$, 95% CI [.01, .03] in predicting readiness to quit smoking after controlling for length of time smoked (in years). These effects were qualified by a significant interaction between displacement imposition and cigarette vs. e-cig use status, $F(4, 244) = 13.60$, $R^2 = 18.23\%$, $p < .0001$, 95% CI [-.014, -.002]. The interaction was significant when displacement imposition was 1SD below the mean and at the mean but not at lower levels of displacement.

Conclusions: At high levels of displacement imposition, both cigarette and e-cig users exhibited less readiness to quit smoking, an effect that was stronger among cigarette users than e-cig users. Findings may support that greater restrictions imposed on cigarette and e-cig users indicate more reactance and less readiness to quit smoking. The stronger effect found among cigarette (vs. e-cig) users may reflect greater stigma associated with smoking cigarettes compared to e-cigs (McKegany et al., 2018). Future work should assess the effects of smokers' displacement imposition longitudinally to examine whether the present study's findings translate to actual attempts to quit smoking.

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D367

10:30 AM-11:30 AM

TOBACCO AND MARIJUANA USE AND THEIR ASSOCIATION WITH SERUM PROSTATE-SPECIFIC ANTIGEN AMONG AFRICAN AMERICAN MEN IN CHICAGO

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Background: African American (AA) men experience more than twice the prostate cancer mortality as White men yet are under-represented in academic research involving prostate-specific antigen (PSA), a biomarker of lethal prostate cancer.

Methods: We examined the impact of self-reported tobacco (cigarette pack-years and current tobacco use including e-cigarettes) and current regular marijuana use on serum PSA level based on clinical laboratory testing among 928 AA men. We defined outcome of elevated PSA ≥ 4.0 ng/mL for multivariable logistic regression models and continuous PSA increases for general linear models. All models were adjusted for age, sociodemographic characteristics, healthcare utilization, body mass index, and self-reported health.

Results: Among 430 AA men age ≥ 55 years, we observed ~5 times the odds of elevated PSA among those with >1 pack-years of cigarette smoking vs. never-smokers (odds ratio (OR) = 5.03; 95% confidence interval (CI) = 1.56-16.2) and a quarter the odds of elevated PSA among current marijuana users vs. non-users (OR = 0.28; 95% CI = 0.08-0.99). PSA increased on average 1.25 ng/mL among other current tobacco users vs. non-users.

Conclusions: Cigarette smoking history and current tobacco use may increase PSA levels among older AA men. Current marijuana use may impact PSA levels in a counterintuitive direction. Future work with studies of diverse patient populations with cancer outcomes are needed to assess whether these behavioral characteristics contribute to racial/ethnic disparities in prostate cancer outcomes.

Impact: Our study provides novel evidence regarding potential differences in PSA levels among older AA men according to behavioral characteristics.

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10:30 AM-11:30 AM

“I DID MY PART WHILE I WAS PREGNANT AND NOW, I DESERVE A CIGARETTE”! SMOKING CESSATION AMONG LOW-INCOME PREGNANT WOMEN IN THE US

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Pregnancy creates a unique window of opportunity for smoking cessation. However, pregnant women from disadvantaged groups face personal, social, and environmental challenges that may impede their abilities to quit smoking. This study draws upon the socio-ecological framework (SEF) to explore perspectives on smoking cessation among low-income pregnant or postpartum women in the Mid-south of the United States. Semi-structured interviews were conducted with 60 low-income pregnant or postpartum women. Data were analyzed in Dedoose qualitative software using the grounded theory approach. Findings reveal that at the individual level, the fact of being pregnant, risks associated with baby's health, and desire to breastfeed motivated women to cease smoking during pregnancy. However, some pregnant women perceived that slowing down on smoking during pregnancy was adequate to prevent harm to their fetuses. Other individual level factors that made quitting difficult included nicotine addiction, smoking as a habit, boredom, stressful life circumstances, fear of weight gain, and lack of willpower. At the interpersonal level, living in a smoke-free environment, emotional and practical support from social network members including, partners and family members were thought to facilitate quitting. At the organizational level, access to nicotine replacement therapies and counselling also contributed to their ability to quit smoking. At the policy level, pregnant women viewed increase in cigarette prices, warning labels on the cigarette pack, and ban on cigarette sale as having some effect in helping them to quit smoking. This study offers additional theoretical insights into smoking cessation among low income pregnant and postpartum women in the United States. Designing multilevel smoking cessation interventions while considering the interplay of individual, interpersonal, and environmental factors may lead to better outcomes.

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10:30 AM-11:30 AM

LAPSE TO RELAPSE: HOMELESS YOUTH RETURN TO SMOKING WHEN SUPPORTIVE STRUCTURES AND SELF-REGULATION ARE WEAKENED

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Background: Approximately 70% of homeless youth smoke cigarettes; of these, many smoke daily and exhibit strong nicotine dependence. Yet, evidence indicates that homeless youth are motivated to quit smoking and make multiple quit attempts annually. However, there exists little account of smoking relapse patterns in this population. Understanding the factors that contribute to smoking relapse is essential for developing effective smoking cessation interventions for homeless youth. The purpose of this study was (1) to describe the factors associated with smoking relapse in homeless youth and (2) identify critical timepoints during which to intervene and reduce risk of smoking relapse.

Methods: Thirty-two homeless youth current smokers aged 14-24 years were recruited from a drop-in center in a Midwestern city. In-person semi-structured interviews about patterns and determinants of smoking behaviors were conducted with each youth. Study personnel coded interviews inductively for a variety of smoking-related behaviors. Themes were generated from these codes. This analysis focused on emerging patterns involving smoking relapse.

Results: Homeless youth overwhelmingly reported stress as a reason for smoking relapse. However, they also described specific precipitating events that decreased social supports and increased stress, leading to relapse. These events included loss of a loved one, verbal or physical conflict with peers, and intimate partner violence. Experiencing depression, anger, or conflicting emotions in response to precipitating events were commonly reported prior to relapse. Smoking was described in terms of stress management (i.e. to cope with disruptive emotions) and harm reduction strategy (e.g. “stepping out” for a smoke to diffuse conflict). Some youth described a high level of nicotine dependence. Very few reported returning to tobacco products because they wanted to.

Conclusion: Homeless youth are at high risk for smoking relapse after experiencing traumatic events. Specifically, homeless youth engaged in cigarette smoking to self-regulate disruptive emotions precipitated by trauma. Current smoking cessation interventions for homeless youth may undervalue the role of emotional self-regulation in sustaining quit behaviors. An opportunity exists for researchers to study multi-level smoking cessation interventions that expand homeless youths’ social and support systems while building individual-level emotional self-regulation skills.

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LATINX SMOKER’S PERSPECTIVES ON AN ACCEPTANCE AND COMMITMENT THERAPY-BASED SMOKING CESSATION PROGRAM: INITIAL FINDINGS

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Background: Acceptance and Commitment Therapy (ACT) has demonstrated promise as an efficacious treatment for smoking cessation, depression, and anxiety separately, but more research is needed to declare ACT as an evidence-based intervention for the co-occurrence of cigarette smoking with depression or anxiety, including among Latinx groups. The extent to which this intervention should be culturally tailored to the Latinx population and how to incorporate cultural considerations in treatment remains to be determined. This study aims to examine the perspectives of Latinx smokers with depression or anxiety symptoms on 1) the perceived utility of ACT-based components for smoking cessation and psychological distress, and 2) cultural factors that may enhance the intervention.

Method: Participants complete a brief questionnaire about demographics, tobacco use, depression, anxiety and psychological traits relevant to ACT. Focus groups (FG; 2 women and 2 men) and individual in-depth interviews are being conducted (expected N = 48). A pilot run-through of the protocol demonstrated the acceptability of the interview guide and the feasibility of conducting the study. Three in-depth interviews have been conducted. Study is ongoing.

Results: Three major themes have emerged so far: emotion regulation, social support, and applicability of ACT-designed metaphors. Emotion regulation was consistently linked to smoking and difficulty quitting; plus, it seemed to influence the understanding of ACT metaphors. Social support was identified as beneficial in their quitting efforts. Some adjustments to the presentation and content of the ACT-metaphors were suggested.

Conclusion: The content of an ACT-based smoking cessation wellness program targeting Latinx smokers seems to be acceptable; however, additional adjustments may tailor the intervention to be more culturally relevant. Findings after study completion will contribute to the adaptation of the treatment protocol to be culturally relevant for Latinx smokers with depression and/or anxiety.

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OVERLAPPING RISK OF USE OF TOBACCO, VAPE, AND PRESCRIPTION OPIOIDS AMONG YOUTH AND YOUNG ADULTS

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Current e-cigarette use increased from 2% in 2011 to 21% in 2018 among US high school students, and recent research has been devoted to understanding this epidemic and the risk factors for use. This study examines the degree to which young people at risk for vaping are also at risk for other substance use behaviors like smoking or prescription opioid misuse.

Data were collected from a national continuous tracking survey of 15-24-year-olds, with daily surveys conducted among approximately 260 participants per week. A 12-week period ending in May 2019 was analyzed for this study (n=3,183). Survey items measured participants' ever and current (past 30-day) smoking, vaping, and ever prescription opioid misuse. Additional items measured intentions for smoking (e.g. "If one of your best friends offered you a cigarette (even 1 or 2 puffs) in the coming year, would you smoke it?"), vaping, and prescription opioid misuse either recreationally or medically. Never smokers answering, "definitely not" to all smoking intention questions were coded as "closed to smoking," whereas never smokers reporting any next-year smoking intentions were coded as "at risk for smoking." Vaping and prescription opioid misuse risks were similarly coded. Sensation seeking was measured using an 8-item scale (e.g. "I prefer friends who are exciting and unpredictable"). Participants scoring 4+ on this scale were coded as "high sensation seekers."

Among ever vapers, 51% had previously smoked a cigarette, and 38% were at risk for smoking. Among never vapers, 36% were at risk for both smoking and vaping. Similarly, 43% of ever vapers had previously misused prescription opioids, and 24% were at risk for prescription opioid misuse. Altogether, 11% of the sample reported ever smoking, vaping, and prescription opioid misuse. Risk for use was significantly associated with high sensation seeking. Compared to low sensation seekers, 37% of high sensation seekers were at risk for smoking (vs. 18%), 49% for vaping (vs. 28%), and 65% for prescription opioid misuse (vs. 36%) (all p's < 0.0001).

Young people at risk for vaping may also be at risk for smoking and prescription opioid misuse. This susceptibility is related to the degree to which they are sensation seekers. Results can inform messages for mass-media health communication campaigns and other behavioral health interventions so that youth and young adults can make informed decisions about their use of these high-risk products.

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ADDRESSING INTERNAL AND SOCIAL CONTEXT IN THE DEVELOPMENT AND OPTIMIZATION OF SMOKING CESSATION TREATMENT FOR HOMELESS YOUTH

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Background: 70% of homeless youth smoke combustible tobacco. A majority of those have tried to quit but do so without supported evidence-based cessation treatment. We used the Capability-Opportunity-Motivation framework for contextually focused behavior change (COM-B) to guide theoretical model development in response to the research question: What internal capabilities and social/physical environmental opportunities need to be in place for homeless youth to be motivated to quit smoking and engage supported tobacco cessation treatment?

Methods: Recruited on age (14-17 and 18-24) and motivation to quit in the next 30 days, homeless youth smokers from a drop-in center completed qualitative interviews (n=36). Each interview transcript was coded twice, and themes were inductively identified by subgroup (14-17 year olds, 18-24 year olds motivated to quit, and 18-24 year olds not motivated to quit). For each subgroup, themes were grouped into a theoretical model highlighting key capabilities and opportunities necessary for homeless youth to engage supported cessation and mechanisms of change to target for treatment success (Inter-rater reliability Krippendorff's $\alpha=.791$).

Results: Knowledge of evidence-based cessation methods was the key internal capability identified for homeless youth to engage cessation treatment; whereas, stress reactivity, emotion regulation and executive function are theorized mediators of cessation success for the population. External opportunities include on-site tobacco treatment, immediate support following cessation lapse, structured social activities with non-smoking peers, and drop-in center tobacco free policies. Other capabilities and opportunities by subgroup will be presented.

Conclusions: The internal and environmental context must be considered when designing a smoking cessation intervention for homeless youth given the chaotic circumstance in which they live and are trying to make behavior change. Generated models will serve as the theoretical foundation for the selection of contextually-targeted cessation intervention components for homeless youth to be tested using the *Multiphase Optimization Strategy* (MOST), a novel intervention optimization approach.

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CULTURAL AND DEMOGRAPHIC CORRELATES OF DUAL TOBACCO USE IN A SAMPLE OF ALASKA NATIVE SMOKERS WITH HEART DISEASE RISK FACTORS

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Background/Objective: Approximately 9 million U.S. adults use two or more tobacco products regularly. In Alaska, where tobacco is not native, 41% Alaska Native people smoke cigarettes, compared to a state smoking prevalence of 19%. Studies suggest that Alaska Native smokers average fewer cigarettes per day when compared to non-Alaska Native smokers, which may be due in part to dual use with other tobacco products. Previous research suggests that dual tobacco product use may be especially high among Alaska Native people when compared to non-Alaska Native people. The current study examined associations among Alaska Native cultural and demographic characteristics with dual tobacco use.

Methods: Alaska Native smokers in the Norton Sound region of Alaska were recruited as part of a treatment trial targeting cardiovascular disease risk behaviors. The sample was 299 Alaska Native smokers (48.5% female) averaging 46.3 years of age (SD=14.0); identifying as 28% Yup'ik, 61% Inupiaq, and 11% other. In addition to demographics, participants reported whether they spoke their tribal language, how much they identified with their tribal heritage, and tobacco-related behaviors. The primary outcome was dual tobacco product use (cigarette smoking plus use of chew/snuff, e-cigarettes, and/or iqmik, an ash from the birch tree fungus mixed with tobacco leaves to be chewed), defined as used every day or some days and within the previous month.

Results: The majority (85%) reported somewhat or strongly identifying with their Alaska Native heritage. The sample averaged 12.4 cigarettes/day (SD=10.0), and past 30-day dual tobacco use (10%) was reported by gender as: chew/snuff (14% males, 3% females), e-cigarettes (1% males, no female use), or iqmik (1% males, 3% females). Regression models indicated that men (OR = 3.18, $p = .014$) and participants identifying as Yup'ik (OR = 2.90; $p = .029$) were more likely to be dual tobacco users. Dual use was less likely among participants who were older (OR = 0.95, $p = .003$) and those who more strongly identified with their Alaska Native heritage (OR = 0.33, $p = .024$).

Conclusions: Dual tobacco use may challenge successful tobacco cessation efforts. E-cigarette use was next to nonexistent. Cultural factors, such as tribal affiliation and identification with Alaska Native heritage, associated with dual tobacco use among Alaska Native people warrant further consideration and attention in tobacco treatments. Commercial dual use, particularly among men and those identifying as Yup'ik, is more common as a dual use pattern in this Northern Alaskan community and should be included as a target in tobacco treatment.

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PERCEIVED HARM AND VAPING/MARIJUANA DUAL-USE AMONG LATINO AND NON-LATINO HIGH SCHOOL STUDENTS IN COLORADO

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Youth perception of harm of vaping and marijuana products is low. As more young adults begin to vape both tobacco and marijuana, it is important to evaluate risk factors for their use. This study evaluates the association between perceived harm and vaping/marijuana dual-use among Latino and non-Latino high school students in Colorado.

Methods: We analyzed data on 13,546 students aged 12 to 18+ years participating in the 2017 Healthy Colorado Kids Survey. Variables included: grade (9/10/11/12/Ungraded), ethnicity (Latino/non-Latino), race (White/Black/Asian/American Indian or Alaska Native/Native Hawaiian or Pacific Islander/Multiracial), sexual orientation (LGBQ/heterosexual), grades (A's or B's/C's/D's, F's, or Not Sure), perceived harm of vaping and marijuana products (No or Slight Risk/Moderate or Great Risk), and dual-use (No Products Used/At Least One Product Used/Both Products Used) based on whether a student used a vapor and/or marijuana product in the past 30 days. We calculated odds ratios and 95% confidence intervals using 2 multinomial logistic regression models to evaluate the association between perceived harm and dual-use while controlling for other variables.

Results: 19.3% of students identified as Latino and 80.7% as non-Latino. 17.2% of Latinos were dual-users compared to 13.6% of non-Latinos. Among Latino dual-users, 58.7% believed vaping and marijuana products had no/slight risk of harm and 11.2% believed both had moderate/great risk of harm; among non-Latino dual-users, 58.1% and 11.5% believed both had no/slight and moderate/great risk of harm respectively. Latinos had a 3.7 greater odds (CI:2.7-5.1; $p=0.00$) and non-Latinos had a 5.9 greater odds (CI:4.8-7.2; $p=0.00$) of using at least one product if their perception of harm was no/slight for both products compared to non-users who believed both products had moderate/great risk of harm. Also, Latinos had a 5.8 greater odds (CI:3.4-9.8; $p=0.00$) and non-Latinos had a 10.18 greater odds (CI:8.1-12.8; $p=0.00$) of being a dual-user if their perception of harm was no/slight for both products. Race and sexual orientation appeared to have a larger effect on dual-use for Latinos compared to non-Latinos, with Latino Black students having a 3.2 greater odds (CI:1.8-5.7; $p=0.00$) of dual-use compared to Latino White students and LGBQ Latino students having a 2.0 greater odds (CI:1.2-3.6; $p=0.01$) of dual-use compared to heterosexual Latino students.

Conclusion: Latino students were more likely to be dual-users than non-Latino students. Although perceptions of harm did not differ by ethnicity, the effect of believing these products had no/slight risk of harm was much larger for non-Latino students. However, Latino minorities had a greater risk of being dual-users compared to non-Latino minorities. Additional studies are needed to evaluate protective factors among Latino students and other influencers of dual-use.

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TRAUMA, COPING, AND GROWTH FOLLOWING COMPLICATED CHILDBIRTH: DIFFERENCES FOR NICU MOTHERS

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Introduction: Mothers who experience adverse medical events in childbirth report greater postpartum emotional distress. Mothers of infants hospitalized in the neonatal intensive care unit (NICU) are at even higher risk, as they face unique NICU stressors that complicate postpartum psychological adjustment. Little is known about differences in trauma experiences for NICU mothers following medical adversity in childbirth.

Method: Women who had a difficult/adverse childbirth ($N = 204$) were recruited in the first year postpartum via social media advertisements for an online survey about perinatal experiences. The majority were White (89%), married (76%), and primiparous (60%) with $Mage = 29.46$. 41% ($n = 83$) had a baby admitted to the NICU. Participants completed measures assessing traumatic childbirth, posttraumatic stress disorder (PTSD), postpartum depression, coping strategies, posttraumatic cognitions, and posttraumatic growth.

Results: NICU mothers were more likely to have a traumatic childbirth [86% vs. 64%, $\chi^2(1) = 11.13$, $p = .001$]. There were no differences between NICU and non-NICU mothers on measures of PTSD, posttraumatic cognitions, or depression. Univariate analyses revealed significantly higher emotional disengagement coping, but this difference did not persist in multivariate analyses with relevant demographic and obstetric covariates. Linear regression analyses including relevant covariates indicated that NICU mothers engaged in more maladaptive self-criticism to cope ($B = 2.98$, $t = 2.73$, $p = .008$). NICU mothers also reported significantly more posttraumatic growth pertaining to spiritual change ($B = 1.65$, $t = 2.23$, $p = .029$) and appreciation of life ($B = 2.28$, $t = 2.27$, $p = .026$).

Conclusion: All participants in this sample experienced adverse medical events during childbirth, but only a subset had a baby admitted to the NICU. There was no difference in postpartum emotional distress between NICU and non-NICU mothers; however, NICU mothers were more likely to engage in self-critical maladaptive coping. These results are consistent with the literature citing self-blame as a common problem for NICU parents, particularly mothers. Programs designed to support NICU mothers should include stressor-specific skills aimed at building adaptive coping. Spiritual change and appreciation of life may represent areas of resilience in this population, as NICU mothers reported more personal growth in these areas.

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FEASIBILITY OF A HOME-BASED ONLINE YOGA INTERVENTION IN WOMEN WHO HAVE EXPERIENCED STILLBIRTH?

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Introduction: Over 2.6 million babies die each year from stillbirth, (death of a baby 20 wks gestation to birth). Bereaved mothers are at increased risk for symptoms of post-traumatic stress, anxiety, and depression. Yoga has been used in other populations to reduce symptoms of post-traumatic stress and may be feasible following a stillbirth. The purpose of this study was to determine the feasibility of a 12-wk, home-based, online-streamed yoga intervention and a stretch-and-tone control group with varying doses. Data from this study will be combined with other formative data and used to inform a multiphase optimization strategy (MOST) design trial.

Methods: Participants were recruited nationally. Ninety women were randomized into one of three groups (low dose, 60-min per wk; moderate dose, 150-min per wk; and stretch-and-tone control group). All participants completed weekly logs for attendance and minutes of participation in yoga was also tracked online with Wistia software. Satisfaction surveys were completed post-intervention.

Results: Thirteen participants (14%) dropped out (e.g., pregnant, mood related) and 29 (32%) did not complete the intervention, with 48 (53%) completing the study. Benchmarks were met for all groups related to enjoyment, and satisfaction. Benchmarks were met in the low dose and control groups regarding appropriateness of the prescribed dose. In the moderate dose group, 57% thought the prescribed dose was too much. Benchmarks for attendance (i.e., time spent in yoga) were not met in either the low or moderate dose groups, 29% and 8% respectively. Across the intervention, low, moderate, and control groups averaged 21, 85, and 55 min/wk of yoga, respectively. Over 60% of participants reported they would continue practicing online yoga or exercise and recommend the intervention to women who have experienced stillbirth. Almost 70% reported they would have participated more if the study had a social support group and 96% reported social support should be included in future studies.

Discussion: The online yoga intervention (and control group) was feasible. Although participants were satisfied with the intervention, they did not meet expected benchmarks for participation. Sixty min/wk of yoga was reported to be more appropriate than 150 minutes. Future studies should explore the feasibility of online yoga with a social support component as well as determining the resources women need to be successful at participating in online yoga.

Objective 1: Identify the need for mental and physical health interventions for stillbirth mothers.

Objective 2: Identify components of an online yoga intervention that may be necessary to improve compliance to the intervention.

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PROVIDER RECOMMENDATIONS AND PATIENTS' DECISIONS TO ENGAGE IN LIFESTYLE BEHAVIORS FOR OSTEOPOROSIS PREVENTION AND MANAGEMENT

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Introduction: Adequate calcium and vitamin D intake and physical activity are key lifestyle behaviors to prevent and manage osteoporosis, yet remain sub-optimal among older adults. While effective patient-physician communication is integral in clinical practice, little is known of the impact on patients' decisions to engage in lifestyle behavior change for osteoporosis prevention or management. The objective of this study was to 1) determine the prevalence of patient-physician communication on recommendations for lifestyle changes, including calcium and vitamin D intake, and physical activity after DXA screening, and 2) evaluate the impact of patient-physician communication on lifestyle behavior change.

Methods: Patients 50 years and older who had no prior diagnosis of or treatment for osteoporosis, and whom their physician referred for initial DXA screening at a hospital in Saskatchewan, Canada were eligible. Calcium and vitamin D (diet and supplement) and physical activity were assessed at baseline and 6-months after DXA. Patient-physician communication and lifestyle recommendations were assessed 6-months after DXA.

Results: The mean age of participants ($n = 188$) was 60.1 ± 7.3 years and 85% were female. Participants who discussed DXA results with their physician and received recommendations to engage in lifestyle behaviors ($n = 68$) were more likely to start or increase calcium intake ($p < 0.01$) and vitamin D intake ($p = 0.02$) and had a greater mean change in total calcium and vitamin D ($p < 0.01$) compared to patients who discussed results with their physician but received no recommendations ($n = 35$) or had no physician follow-up ($n = 85$). In adjusted models, receiving lifestyle recommendations from a provider and receiving osteoporosis education were independently associated with patients' decisions to engage in lifestyle behaviors to prevent or manage osteoporosis.

Discussion: The present study takes an important step toward understanding the role that patient-physician communication plays in fostering a patient's lifestyle behavior change to prevent and manage osteoporosis.

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